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ANNIVERSARY 20TH

MAY/JUNE 1999

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Viognier **78** VARIETAL REVIEW

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www.practicalwinery.com

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PRACTICAL WINERY & VINEYARD (ISSN 9739-8077) is owned and published by PWV Incorporated. Published bi-monthly at subscription rate of $31/year. Outside the United States, please add $10US, sea mail; $18US, air mail. Postmaster: Please send change of address to 15 Grande Paseo, San Rafael, CA 94903. Back issues: $5 prepaid. News media may use no more than ¼page of material per issue provided that PRACTICAL WINERY & VINEYARD is credited.

PRACTICAL WINERY & VINEYARD

MAY / JUNE 1999 • VOL. XX, NO. 1

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LETTERS TO THE EDITOR

Napa degree days

On page 49 of the March/April-1999 *PWV*, middle column, Doug Fletcher at Chimney Rock Winery, Napa, CA, seems to have the wrong information. Degree day information is available on the net at www.ipm.ucdavis.edu. The five year average degree day data is: 2,717 for Carneros, 3,289 for Oakville, and 3,767 for St. Helena.

***Leon Sobon**, owner*
Shenandoah Vineyards
Plymouth, CA

Oak seasoning

I read with great interest the article written by Tim Olsen in the January/February 1999 *PWV*, "American oak in transition, a study in *terroir*." I would like to offer the following observation of the study done by Tonnellerie Francaise: While it has long been accepted by coopers and winemakers that the origin of the oak in their barrels has a significant role in defining the characteristics imparted by the wood to the wine, it is also known that the seasoning of the stave wood before manufacture has an even more profound impact.

Species, climate and soil, as well as other environmental factors determine the evolution of a tree. Species, environment, and exposure to climate determine how stave material evolves during seasoning.

The universal practice in the cooperage industry is to consolidate all material for seasoning, regardless of *terroir*, at one location, among other reasons, to control the variables of average humidity, average ambient temperature, prevailing winds, and microbial influence which play the ultimate role in evolving the phenolics and textures of stave wood.

Seasoning the material used in the Tonnellerie Francaise study in different locations and under significantly different climatic conditions seriously flawed an ambitious and potentially valuable evaluation of the effect of *terroir* on the barrel.

***Keith Roberts**, Master Cooper*
Mendocino Cooperage
Hopland, CA

Keep up the good work

I received my subscription-renewal notice for *PWV*. As I filled it out to re-subscribe, I saw the space to submit suggestions. After reading the March/April-1999 *PWV* as usual from cover to cover, I though of writing to you.

In 1991, I took an early retirement from teaching high school industrial arts and science in San Diego, CA, and moved to our orchard in the Mattole River Valley in Humboldt County. We had purchased seven acres back in 1971 after completing graduate work at Humboldt State and deciding that my wife and I did not want to end up in southern California.

We built our home utilizing the"owner/builder" permit. It took 2½ years to complete this labor of love. An old family friend sent us a house-warming gift of grape cuttings of a Pommard Pinot Noir clone and a Pinot Gris clone from an excellent vineyard. He sent instructions along with several issues of *Wine Spectator* and several back issues of *PWV*.

The May/June-1996 *PWV* had a varietal review on Pinot Gris and harmonizing flavors with Pinot Gris. The Jan/Feb-1997 *PWV* had an informative article on "What is a cool climate." I was so impressed with the quality of information, I sent in my money and received my first *PWV* in July/August 1997.

The cuttings have now grown into 125 Pinot Noir and 65 Pinot Gris vines planted into a vineyard that was once the vegetable garden. We harvested the first crop in 1998. After the birds got most of the Pinot Noir grapes, we netted the rest of the grapes and ended up with 35 pounds of Pinot Noir and 135 pounds of Pinot Gris. From this we got one gallon of red and six gallons of white wine.

It has turned out that growing the vines with the help of the excellent articles written by Dr. Richard Smart and others in *PWV* has been a pleasure. My wife says I spend more time in the vineyard that I do with her. The quote from one *PWV* writer that the most important ingredient in a successful vineyard is the shadow of the grower seems to be a truth.

Another series of articles by George Schofield "Wine industry economic pitfalls" has been most instructive. When I first got the cuttings and started dreaming of making my fortune in the wine industry, I had no idea what was involved. The series was eye-opening to say the least. I appreciate the honesty of his presentations. They are a far cry from the days of making a fortune by raising chinchillas in the garage.

Finally, a favorite part of *PWV* is the essays "In the cellar" by Jake Lorenzo. He is able to get to the heart of the ancient process of how growing the vines and making the wine gets into one's soul. The latest "Not for sale" is right on the money as far as I am concerned. Growing and making my own wine is the only way I will be able to enjoy fine wine. If you folks can put together an occasional article on techniques for the small scale grower/vintner, I think you would find an audience.

Keep up the good work. Please give my regards to Jake.

Bob Bush,
Bush's Trees and Vines
Petrolia, CA

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THROUGH THE LOOKING GLASS

Growing, vinifying, and marketing Pinot Noir

IN BURGUNDY, CALIFORNIA, AND OREGON

by Ted Lemon
Littorai Wines, St. Helena, CA

"Who are you?" said the Caterpillar. This was not an encouraging opening for a conversation. Alice replied, rather shyly, "I – I hardly know, Sir, just at present — at least I know who I was when I got up this morning, but I think I must have been changed several times since then." "What do you mean by that?" said the Caterpillar, sternly. "Explain yourself!" "I can't explain myself, I'm afraid, Sir," said Alice, "because I'm not myself, you see." "I don't see," said the Caterpillar. "I'm afraid I can't put it more clearly,"Alice replied very politely, "for I can't understand it myself, to begin with; and to be so many different sizes in a day is confusing."

The Annoted Alice by Lewis Carroll.

Is Pinot Noir the Alice in Wonderland of grape varieties? Perhaps changeability is precisely what intrigues us so about Pinot Noir and explains the passion that we all feel for this difficult grape variety.

My history with Pinot Noir

I began working with Pinot Noir while attending the Enology School of the University of Dijon in 1980. I worked as an apprentice at many estates in Burgundy: Domaine Dujac, Domaine Bruno Clair, Domaine Georges Roumier, Domaine de Villaine, and others. I worked briefly at Calera Wine Company in California and then returned to Burgundy to be the winemaker and vineyard manager for Domaine Guy Roulot in Meursault 1982 to 1984. From 1985 until 1992, I was winemaker and vineyard manager for Chateau Woltner on Howell Mountain in Napa Valley.

Since then I have been working as a winemaking and viticultural consultant to many wineries in California.

My work with Archery Summit in the Red Hills of Dundee, OR, and the Franciscan label Estancia in Monterey County, CA was particularly related to Pinot Noir. Augustin Huneeus and then winemaker, Greg Upton, asked that I evaluate the future of their Estancia Pinot Noir project in Monterey at a time when they were unsure whether to continue. Since then, Estancia has made a major commitment to Pinot Noir in Monterey, in both plantings and winemaking facilities.

I have worked intimately with both Estancia and Archery Summit on site selection, rootstock and clonal combinations, winery design, and winemaking style.

In 1992, my wife and partner, Heidi, and I spent the year traveling from Walla Walla, WA, to San Diego, CA, looking for great sites to grow Pinot Noir and Chardonnay. We concluded that there is no single holy land for Pinot Noir, that very fine wine is being made in small quantities in the Willamette Valley, in Carneros, in Monterey and the Gavilan Mountains, as well as in Santa Maria.

We felt, however, that the greatest untapped potential lay on what we call the true North Coast, the littoral zone spanning western Sonoma and western Mendocino counties. That is where we decided to stay. The first vintage for Littorai Wines was 1993. All of the wines are vineyard designated, and we produce only Chardonnay and Pinot Noir.

Golden age of American Pinot Noir

With apologies to the wine critic Robert Parker, I would suggest that we have entered a golden age of American Pinot Noir. How and why has this happened?

I think that our Burgundian friends must feel like proud parents who realize suddenly that their child has become an adult equal. Yesterday the child was pedaling around the neighborhood on a tricycle, and now he pulls up on a 10-speed and says, "Let's go, Dad."

Roger Dion's extraordinary work *History of the Vine and Wine in France from Its Origins to the 19th Century*, originally published in 1959, is rich in lessons that can be applied today to American winegrowing in general and American Pinot Noir in particular.

In his introduction, Dion explains that in the 16th century, the wines produced from the area around Paris were considered equal to the very best Champagnes. In Dion's research, average temperature, average sunlight hours during summer, frequency of spring frost, and humidity were all slightly in favor of the Paris region. Dion was shocked that, in a country where the vine enjoys the greatest prestige, the public is utterly ignorant of this important past. He postulates:

> "Perhaps this ignorance is an effect of this very prestige. We would rather find that the virtues of French vineyards are the gift of natural privilege, a particular heavenly grace bestowed upon the earth of France. It is as if there was more honor for our country in receiving its viticultural fame from Heaven rather than from the toil of men, a viticultural fame in which our ancestors found a subject of collective pride even before the notion of a French nation existed.
>
> "From this flow so many illusory arguments and facile explanations, filling the commonly accepted notions of viticultural history. A great success, when it is the fruit of long and hard work, makes the latter vanish."

This extraordinary passage contains

many lessons of geography, viticultural history, and marketing which merit further exploration.

For all of us, including myself, who think that we will make the American equivalent of Romanee Conti, there are still many regions undiscovered, and generations of better Pinot Noir lie ahead in the 21st century.

The fleeting accolades of the press are not a measure of true greatness. We can all cite the names of wineries that were hot a few years ago and are not today. The lesson? Concentrate on the long-term.

Public perception of what constitutes a "great" viticultural region shifts with the sands of time and culture.

Some regions capable of producing the finest Pinot Noir may be passed over, not because of quality but because the proper cocktail of geography, PR, and circumstance does not come together.

The great success of American Pinot Noir, which seems so sudden, is merely the culmination of generations of hard work. We can trace it back through the efforts of David Lett of Eyrie, Charles Coury, Dick Graff at Chalone, Martin Ray, Andre Tchelistcheff, and Thomas Jefferson.

We can trace it back through the vineyards of Burgundy that have so inspired us all, back to Burgundy's parent Roman viticulture and finally back to the very origins of the vine.

Several factors have come together today to contribute to Pinot Noir's success: The acceleration of scientific knowledge in the late 20th century; an educated, energetic, sophisticated population of winemakers; a dynamic and wealthy nation whose consumers of fine wine now accept American wine as equal to or nearly equal to European wines, thus providing an economic base for ongoing experimentation and improvements; and last, but not least, the discovery of *terroirs* of distinction.

Where will great American Pinot Noir be grown in the year 2050? I am sure that you have guessed, following Dion's quote, that no one can say. Fifty years ago, Andre Tchelistcheff produced what was arguably the first great American Pinot Noir.

Most of the leading regions for the grape today did not even exist at that time. Much will change in the next 50 years. I suspect that many of the leaders today will be the leaders then, but some will probably fall by the wayside. Some very surprising new regions will emerge.

The golden age of Burgundy?

Burgundy is undergoing many difficult and yet exciting changes. Among the positives is a general recognition among leading winemakers there that tradition must share a place at the table with scientific research and advances. An excellent example of this is the wide acceptance that clonal selections have a place in Burgundian plantings.

In addition, a modern and dynamic university committed to providing that research has emerged. The Institut Jules Guyot did not even exist at the Universite de Bourgogne when I was a student there 20 years ago. There was only one professor, Michel Feuillat. This is an enormous change and a great testimony to Professor Feuillat's efforts.

Burgundians now recognize that they must do everything possible to emphasize the inherent originality of their appellations. They are asking the question: "How can science in all its forms — geology, soils science, enology, viticulture, as well as alternative paths such as bio-dynamics — help make Chambertin more Chambertin-like?"

This effort to define typicity is an enormously ambitious undertaking, and there is no other winemaking school in the world doing work on this scale. This is exciting and valuable research, useful to everyone.

Finally, the youth in Burgundy are now aware that working in viticultural areas outside of France will bring them valuable knowledge and experience. They recognize that the French way is not necessarily the only way.

There are challenges in Burgundy also, most particularly, the inheritance laws and taxes are collectively a grave threat to the continuity and individuality of Burgundian estates. Who will own Burgundy in 2050?

The Appellation d' Origine Contrôlée (AOC) system also presents a great challenge. It dictates what varieties Burgundians can plant; what they can call the wine; vine density and, thereby indirectly, trellis system; sugar parameters at harvest; yields; and when and how much they can replant. While the system seeks to insure a minimum quality standard and guarantee the authenticity of wines, a very large price is paid in return.

The appellation system creates a chokehold on vast areas of innovation and experimentation. I believe it is impossible to legislate quality or typicity, and therefore, I have been a reluctant critic of the AOC system. Poor wines are given the official stamp of approval and sell because they carry a famous vineyard name.

Yet, in the last few years, my opinion of the AOC system has begun to change. In our current wine world, where sales and prestige are so driven by media reviews, the system may play a very different role than its founders ever envisioned. Perhaps the appellation laws will work as a protective umbrella, allowing winemakers who do not hew to the winemaking fashion of the moment to continue their craft and prosper.

Perhaps the appellation system ultimately protects and insures the ***diversity*** of wines and winemaking styles within prestigious appellations. If the current style is for 100% new oak, or even 200% new oak, and you use none because that is your esthetic choice, the AOC system will nonetheless recognize the merit of your *terroir* and your craft.

What we all have in common

With tongue-in-cheek, I have referred to our common enemy, Cabernet Sauvignon. It is nevertheless true that Cabernet Sauvignon wants to be everything Pinot Noir already is: soft, supple, elegant, and accessible.

Our real goal should be to make Pinot Noir the great red grape of the 21st century, not in quantity but in quality. We must increase the American market for fine wines and for Pinot Noir in particular. No one wins if we are all fighting over the same three doctors living on the upper east side of Manhattan.

We must support the applied research that will make better Pinot Noir and will reduce our effects on the environment. Wine must be perceived as a "green" product. Research should be in the public domain. This is becoming a critical issue in science, particularly in the field of genetic research where efforts are underway to patent bits of genetic coding. This is a very real potential danger.

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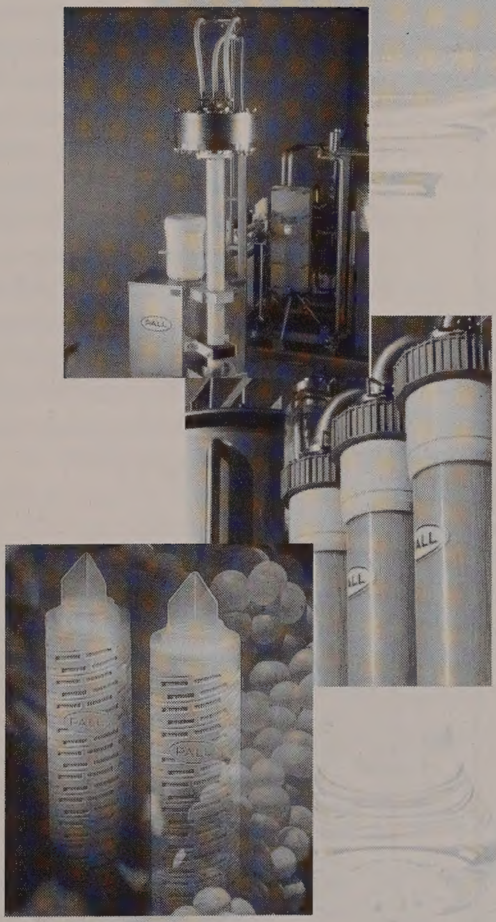

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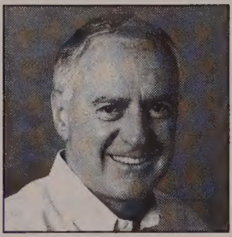
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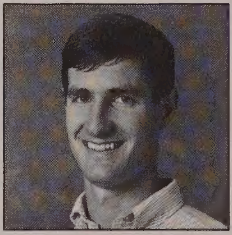
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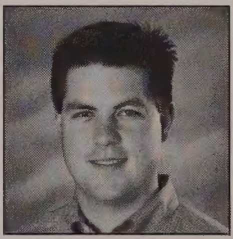
Brad Miller

FREE RUN

Diseases, pests, and viruses are not nationalists and do not respect borders. No one knows where the next great challenge will come from nor do we know whose lab will find the solution.

In the research domain, we are all interested in phenolic compounds, and no one person or laboratory will provide a complete understanding of them. The knowledge will have to be shared.

All of us today would agree that the combination of new American *terroirs* and the Pinot Noir clonal selection work fathered by Raymond Bernard, retired regional delegate to ONIVINS, Dijon, France, have played a significant role in the increase of American Pinot Noir quality. The sharing of those clones has been most controversial in France.

We need look no further than the history of phylloxera and its solution to be reminded of the importance of sharing information and results internationally. Today, Andy Walker at UC Davis is doing innovative work with rootstocks, which may some day benefit us all.

Finally, I believe that, together, we must face the threat of internationalism in wine styles and the emergence of a media-driven wine esthetic. We must all work to promote and encourage diversity and typicity in wine styles, and we must re-educate consumers to understand and appreciate diversity. If we all begin to make the same wine for the critics, we will lose all we have gained, and we will dishonor and abuse the precious notion of *terroir*. ■

Edited from presentation to Second Joint California, Oregon, Burgundy Symposium, UC Davis, February 9, 1999.

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SMART VITICULTURE

by Dr. Richard Smart

Viticulturists, the real winemakers!

I have thought a lot about the fact that, in the New World wine business, one sector of the wine production process is given a majority share of the credit for wine quality. This seems wrong to me, as winemaking is a continuum which begins with planting of a vineyard and concludes with the dispatch of cased goods. Surely more people than the enologists contribute to this process, yet the enologist is called the "winemaker."

I discussed this issue with viticulturists and enologists on a recent Syrah Discovery Tour of South Australia. The majority, including the enologists, agreed with my arguments. Several of them contributed their ideas to this column.

What is a winemaker?

This seems such a simple question, but is it? Does anyone really *make* wine? We know what *wine* is, but what do we mean by the word *make*? To me it implies ***creation*** and or ***causing to exist***. But is wine really made by man (or woman)? Surely yeasts are responsible, by turning grape sugar to ethanol and, in the process, extracting other grape constituents.

In fact it seems to me that there are three, and perhaps four, different species involved in this process. The plant species *Vitis* produces the grape, the yeast species *Saccharomyces* (normally) provides the fermentation, and an animal species *Homo* supervises both processes. There seems to be an increasing tendency to involve another yet plant species — the oak, *Quercus* — in winemaking, especially in the conservation process. The same species has provided stoppers (cork) for wine for millennia, being used since the time of the ancient Greeks.

Winemaker or enologist?

Why then do we English speakers select one part of this process for special recognition, that being the human supervision and conduct of the fermentation and conservation? The English language does not have an indigenous winemaking heritage, as do many other European languages. I think the basic problem here is with the use of words within the English language. No European language with a winemaking heritage has an equivalent term to **winemaker** used to describe the **enologist**. The cult status of the winemaker has developed primarily in the New World, from English language origins.

In the Old World, the responsibility for winemaking is divided between the viticulturist (responsible for supervising the vineyard processes) and the enologist (responsible for supervising the winery processes). This is not necessarily an equal division. The prevailing Old World sentiment is that "wine is made in the vineyard."

Consider the terms that are used for viticulturist and enologist in other languages. Thus, in Italian, we have, for example, the terms *viticultore* and *catiniere* (or perhaps *enologo*) to describe the persons responsible in the vineyard and cellar respectively. In French, we have the terms *le viticulteur* (or chef de culture) and *l'oenolgue* (or *maitre de chai*), in German *der winzer* and *der ounologe*, in Spanish and Portuguese the same words *viticultor* and *enologo*.

You may well wonder if this debate of semantics really matters. So what if the enologists are given a lion's share of the glory for producing this wonderful yet seemingly mysterious product of wine? The column must be written by a viticulturist who has his nose out of joint, and his ego dented by insufficient recognition! Maybe so, maybe not. Public perception and media attention aside, there are professional implications to this situation.

As much as I love viticulture, I must advise young persons against choosing it as a career. The rates of pay for viticulturists are less than for enologists, as are the opportunities for advancement and promotion in many wine companies. Job satisfaction can be much less in viticulture, since there is no widespread recognition of the relevance of vineyard management to wine quality creation.

I once heard an enologist tell a joke against the inflated ego of his colleagues. He said some of them look for the imprint when they pull their hand from a bucket of water! Look through the pages of popular wine magazines and compare column inches of articles about enologists to articles about viticulturists. No wonder some of the New World enologists have inflated egos. This perception of the important of enologists arises essentially from this poorly defined word *winemaker*.

Crux of the argument

Wine quality is more dependent on processes that happen before than after the harvesting of the grapes. In other words, viticultural practice is more important than winery practice in affecting wine quality. From a wine quality viewpoint, viticulture is a practice of **creation**; enology is a practice of **conservation**. We have all heard the saying "You can't make good wine out of poor grapes." The principal factor affecting wine quality is the composition of the grapes.

Winery practice has much less effect on wine quality. True, wine quality may be reduced by poor cellar practice, but the primary role of the enologist is to express the quality potential inherent in the grape. I should point out that the above remarks apply specifically to still table wines, rather than to wine styles that undergo secondary processing, such as sparkling wine and fortified wines, or substantial ageing, where principal wine characters are from age and not grape derived.

Some supporting comments

Willy Joslin of Wente Brothers (Livermore, CA) told a relevant story to our Syrah tour members. He is involved in an American Vineyard Foundation-funded cooperative study looking at factors affecting phenolic levels in wines. Fruit was taken from various regions and subjected to all winery practices imaginable, including maceration, cold soaking, oak chips, and so on. The differences produced in a wide range of wine analyses were small, on the order of 20% from winery manipulation. Between fruit lots, the variation was much greater (over 100%), demonstrating that the grape contributed more to wine quality than the winemaking process did. Joslin sees cellar practice as being essentially sanitation engineering, with processes governed by price point of product.

David Gates is a viticulturist with Ridge Vineyards (Santa Cruz Mountains, CA), who has a keen interest in wine quality. His experience indicates that vineyard site is most important in affecting wine quality. Gates' concept of *terroir* involves both climate and soil effects. In his view, the vineyards producing out-

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standing quality wines are those which are easiest to manage, because they have good balance naturally and require little manipulation. Water and canopy management are the most powerful tools in the viticulturists arsenal to manipulate wine quality. Diseased fruit — especially fruit affected with Botrytis — detracts from wine quality and exhibits less effect of clone.

Gates suggests that enologists are given more credit than viticulturists because winery businesses often begin with someone's desire to produce wine, and the founder is typically an enologist, not a viticulturist. Wine marketing often requires a name and a face; it would be counter productive from a PR viewpoint to promote a little-known or understood viticulturist. When credit is given to vineyards, it is to the *terroir*, not to the viticulturist.

Dana Merril of Coastal Valley Management (King City, CA) is responsible for managing 10,000 acres of vineyard in central and south coast of California. While he welcomes enologists coming into the vineyard to understand how quality is affected, he wishes they were less preoccupied with yield. He sees a considerable bias and lack of objectivity when enologists discuss vineyard practices.

Signe Zoller is the enologist with Meridian Vineyards in Paso Robles, CA. She has witnessed much change in the attitude of viticulturists and enologists have toward each other. At one time, enology students at UC Davis were discouraged from attending viticulture classes. Now winemaking is regarded more as a team activity, and collaboration is considered important.

One of the highlights of our Syrah Discovery Tour was a visit to Penfolds in the Barossa Valley, home of the celebrated Grange Hermitage. I asked enologist Peter Gago about the contributions of vineyard and winery to this world-best wine, and his answer was definite and clear: "The vineyard contributes the great majority of the quality of Grange."

Some questions to ponder

Perhaps some readers are not convinced of my arguments about the role of viticulture and enology in wine quality. Consider the following comparisons of factors known to affect wine quality most:

- Contrast choice of the variety, clone, and rootstock, with choice of the yeast strain.
- Contrast selection of vineyard site including soil and climate with selection of a winery site, or perhaps choice of fermentation vessels or forest source of barrels.
- Contrast the effects of canopy and water management with those of crushing method and fermentation temperature and duration.
- Contrast the importance of selecting harvest date (admittedly a decision normally jointly made by viticulturist and enologist) with that of selecting degree of toast in a barrel.
- Contrast the effects of fungal diseases of vines and grapes with the effects of wild yeasts in fermentation or bacterial diseases on wine.

The solution:

It will take many a long year before the use of the term "winemaker" can be rationalized to mean other than enologist. However, there is no time like the present to start.

I propose that the term "winemaker" be used generically,

Continued on page 110

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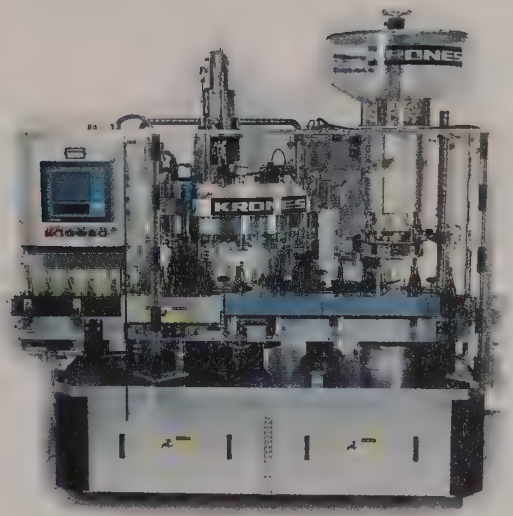

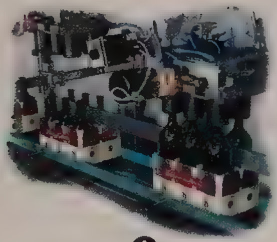

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A leap of faith

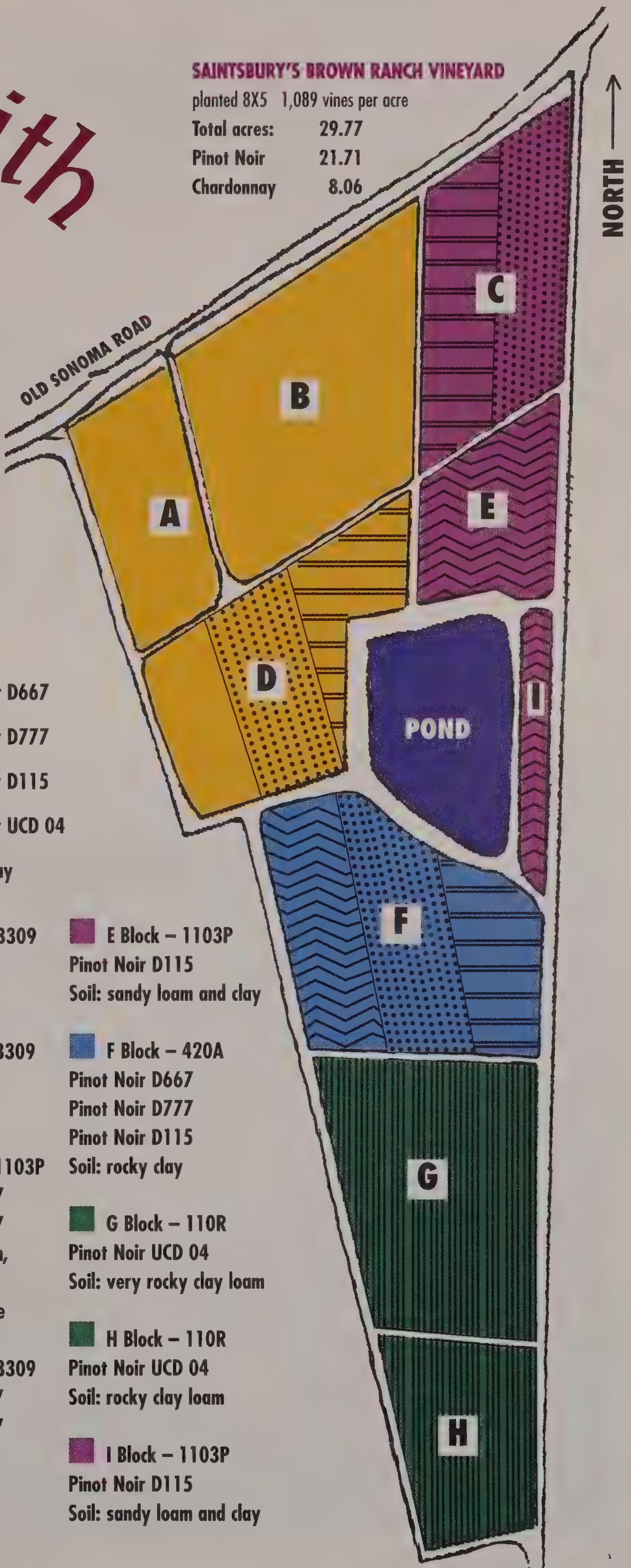
by Mike Marcley

"Since Saintsbury was founded in 1981, we have produced just two wines: Pinot Noir and Chardonnay," says Byron Kosuge, winemaker at Saintsbury in Napa County's Carneros region. "We have grown to 50,000 cases, approximately two-thirds of which are Pinot Noir.

"We now produce four different Pinot Noirs, ranging from 400 cases of the Brown Ranch vineyard designate up to 20,000 cases of the Carneros Pinot Noir. We have a long standing commitment to Carneros, and to Pinot Noir in particular, so naturally we're pretty motivated to push the limits of the kind of Pinot Noir we can produce."

Prior to 1988, Saintsbury relied entirely on purchased fruit, and today, the winery still buys about 65% of its grapes. In 1986, Saintsbury engaged Walsh Vineyard Management (WVM) to establish and manage the first of three estate-farmed vineyards. The first vineyard was planted on 12.5 acres surrounding the winery, which is located about one-third of a mile south of Highway 121, in the eastern part of the Carneros AVA.

Subsequently, two more vineyards have been established: an approximately 10.5-acre vineyard on Cuttings Wharf Road a short distance south of the winery, planted in 1991, and the Brown Ranch, a 40-acre parcel on Old Sonoma Road, planted in 1992. From the outset, the goal was to acquire the best Pinot Noir clones available and then farm and vinify them as intelli-



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🟪 1103P
🟨 3309
🟦 420A
🟩 110R

▤ Pinot Noir D667
░ Pinot Noir D777
︿ Pinot Noir D115
▥ Pinot Noir UCD 04
☐ Chardonnay

🟨 **A Block – 3309**
Chardonnay
Soil: clay loam

🟨 **B Block – 3309**
Chardonnay
Soil: clay loam

🟪 **C Block – 1103P**
Pinot Noir D777
Pinot Noir D667
Soil: sandy loam, well drained with slight slope

🟨 **D Block – 3309**
Pinot Noir D667
Pinot Noir D777
Chardonnay
Soil: sandy clay, clay loam

🟪 **E Block – 1103P**
Pinot Noir D115
Soil: sandy loam and clay

🟦 **F Block – 420A**
Pinot Noir D667
Pinot Noir D777
Pinot Noir D115
Soil: rocky clay

🟩 **G Block – 110R**
Pinot Noir UCD 04
Soil: very rocky clay loam

🟩 **H Block – 110R**
Pinot Noir UCD 04
Soil: rocky clay loam

🟪 **I Block – 1103P**
Pinot Noir D115
Soil: sandy loam and clay

gently as possible.

"We have been purchasing Pinot Noir grapes from a variety of sources around Carneros since 1981," says Kosuge. "Many of these, we think, are Martini selections, probably UCD 13 or 15, although it's hard to trace the lineage in most cases.

The pioneer in clonal evaluation, at least where Carneros Pinot Noir is concerned, is Francis Mahoney at Carneros Creek Winery. His clonal trials, while deservedly famous, contained older selections — those which were available when he planted it. While certainly plenty of good wine has been made from the older selections, we felt that new vineyards should feature new plant material."

With help from WVM, three selections were planted in the winery vineyard: Pommard (UCD 5), "Madonna," and "St Clair." The latter two were field selections named for the vineyards they came from and are thought to be Martini selections. "Both St Clair and Madonna had already been planted in the Cuvaison vineyard," continues Kosuge. "That's where our budwood came from, so it was one generation removed from its origins when we got it."

The staff at Saintsbury and WVM learned quickly that they couldn't always rely on clonal performance in a given vineyard when deciding which clones or selections to plant in a new area. "St Clair and Madonna were selected out in the field (at Cuvaison) on AXR-1 and were asymptomatic then, but now that they're on 110R and 5C rootstocks, corky bark and leafroll symptoms really show up," says Martin Mochizuki, director of viticultural services at WVM.

"Not to speak ill of our own vineyards," notes Kosuge, "but we found out the hard way that you can't assume that a clone that performs well in one situation — soil, rootstock, trellis, etc. — will perform equally well in a different situation.

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yard, in addition to new clones, we wanted to have a vertical canopy and more buds per acre than was the norm at the time. Plus, our equipment limitations made wider rows mandatory. So we felt that a divided canopy (lyre) was the way to go. Vines are spaced 6 ft. by 12 ft. (605 vines per acre) with two bilateral cordons. Shoot density is about five per foot of cordon. The fruit to brush ratios and the vine balance in general are quite good on this vineyard, but now we prefer a single vertical trellis and a higher vine density for ease of management, and more important, wine quality."

New plantings

Saintsbury's two newest vineyard projects increased the winery's vineyard holdings to 52 acres. In 1991, they secured a lease on about 10.5 acres about one-half mile down Cuttings Wharf Road from the winery.

"This particular site, the southernmost of our three vineyards, doesn't look like a very promising place to grow grapes," Kosuge explains. "It's pretty flat, not very well drained, and bordered on two sides by eucalyptus trees. But we've managed to make some very good wines from this vineyard; the meager soil has reined in the vigor of most of the vines. The drainage has been a problem only in a couple of areas."

The eucalyptus trees protect the vineyard from the wind, but they have other effects as well. "When people talk about the *terroir* of a given place, they tend to express it in terms of the soil or the aspect," continues Kosuge.

"But there's a different kind of site effect at work in this vineyard. Nobody's really sure just what it is about eucalyptus trees and their flavor effect on wine, but it's widely observed that grapes grown near them often acquire the distinctive aroma of the eucalyptus leaf. You know, it isn't necessarily negative. It can add an interesting note. And, somewhat mysteriously, it isn't in the same block every year, nor is it strongest in the vines closest to the trees."

Mochizuki describes the Pinot Noir plantings at the Cuttings Wharf site as 2.33 acres of Coury (a non-certified field selection from Oregon) on 5C rootstock, split into two blocks; 2.1 acres of UCD 30 (heat-treated UCD2A, a Wadenswil clone) on 3309; 1.52 acres of CTPS 115 (a "Dijon" selection) on 3309; and 2.94 acres of UCD 12 (formerly known as "Beba"). There are also 1.58 acres of Chardonnay, Beresini selection (from the Beresini vineyard and probably originally Wente). All of the vines are spaced 5x8 (1,089 vines per acre), vertically trellised with a unilateral cordon and five shoots per foot.

"The Cuttings Wharf vineyard has some other less widely planted (in California) selections, including the Coury, Wadenswil and especially the CTPS 115," notes Kosuge. "The 115 proved to be something of a revelation. It was one of the first plantings of the 'Dijon' clones here in California. Even in the first year of production, it gave distinctive and flavorful wine. In subsequent vintages, 1995 and 1996, it yielded beautifully dark, concentrated wines, enough so that I began to wonder if, as good as some of the Pinot Noirs we had made over the years had been, we were not fully realizing the potential of our vineyards."

The Brown Ranch

The following year, Saintsbury purchased the Brown Ranch, the third and largest of the estate vineyards. It is about two miles north of the winery, on the north side of Highway 121. The other two vineyards are south of the highway.

"There's a marked difference in the soils north of the Carneros Highway, at least on the Napa County side of Carneros," explains Kosuge. "South of the highway, in the first two vineyards, the soil is what most people think of as typical Carneros clay loam: basically shallow, uplifted bay sediments, pretty consistent across the region.

"North of the highway, the soils are much more varied. As you get up into the lower reaches of the Mayacamas Mountains (Carneros extends up to 400-foot in elevation), there are pockets of volcanic soils, some sandy, reddish loams, and some very rocky sites. Down at the south end of the Brown Ranch is a sizeable hill, much of which is almost entirely rock and gravel. In one of the backhoe pits we dug on this hill, we were hard pressed to find any soil at all. We wondered where the poor roots were!"

"Spacing, trellising, and training are the same at Brown as they are at the Cuttings Wharf vineyard," Mochizuki says. "Soil types, rootstock characteristics, and clone vigor were the main factors used to plan this new vineyard." The Pinot Noir acreage includes 7.43 acres of Pommard, 3.82 acres of 115, 5.11 acres of CTPS 667, and 5.35 acres of CTPS 777. The remaining 8.06 acres are planted to two Burgundian Chardonnay clones, CTPS 95 and 96."

On the Brown Ranch, special attention was paid to matching rootstock and soil. The new clones were then distributed more or less evenly across the different blocks.

"Down at the foot of the hill, where we suspected vigor might be a problem, we planted 420A, a devigorating rootstock. On the more level areas of the ranch, where the soil is clay loam with varying degrees of sand and gravel, we planted 3309. It seems to be pretty flexible. Starting at the middle of the ranch, which is kind of a shallow swale, and moving northeast up the hill, the soil changes dramatically. The subsoil as you move uphill is fractured sandstone, very well-drained. The topsoil is reddish and sandy — it almost looks volcanic. The vines there are on 1103P.

"The rootstock and soil combinations dictated the block sizes and shapes.

"We planted the 7.43 acres of Pommard up on the hilltop, because down at the winery, it proved to be fairly vigorous," explains Mochizuki. "We felt that the marginal soils would help control vigor. Because it's so rocky up there, water doesn't stay in the root zone very long. We put it on 110R, because we needed a deep-rooted stock that could get down through the rocks and gravel.

"It was a real leap of faith to invest this much acreage in clones with which we had little or no experience. The Burgundians regard all three clones — 115, 667, and 777 — highly. There was a lot going on in Oregon with the new clones as well; in fact, most of what we knew about them initially we learned from David Adelsheim at Adelsheim Vineyards in Newberg, OR. But as we had already learned, transplanting a clone from one site to another was fraught with uncertainty. Still, it seemed like a risk worth taking."

"We could have planted randomized trials to evaluate the new clones, prior to planting them on a larger scale. My feeling about experimental blocks and pilot scale winemaking is that they are useful for determining gross differences between treatments — say pruning weights or cluster weights. Obviously no research study could be conducted without a randomized block design. But most experimental or trial blocks are small, so the farming and especially the winemaking are small scale, 10-gallon lots, or maybe ½-ton picking bins. The result is that the wines seldom turn out the way they would if you made them on a commercial scale.

"Another important disconnect between trials and real world winemaking is that, in a trial, you generally keep conditions artificially the same, whereas in reality, you would vary any one of a number of things in order to make the best wine possible.

"We never had the resources — land — to establish an experimental block large enough that we could grow the grapes and make the wine as we would normally. We chose instead to take the plunge, partly because we're impatient, but also because we felt confident enough in the new clones to plant them to commercial-size blocks.

The number of combinations of site, rootstock, and clones gives Saintsbury ample opportunity for study. Still, Kosuge is careful to point out that what they do isn't real science.

"The new vineyard was not set up especially to compare different rootstocks on the same soils or to compare combinations of clone, rootstock, or soil. Of course, we are keenly interested in the differences between clones and the way they interact with different rootstocks and soils. But what we really care about is trying to get the best wine we can out of each block. Maybe we were lucky, but there's not much I would change about the Brown Ranch, except to have more of the new clones. And maybe make it twice as big.

"There are definite differences between clones in terms of the flavor and aroma profiles of the wines, but for things like cluster morphology and yield, the differences between soil and rootstock/soil combinations are often greater than the differences between clones. The Dijon clones are a little less vigorous than the Pommard and some of the other older selections. They tend to be small clustered and early maturing, although they develop flavor ripeness early as well. They are often picked up to a week earlier than the Pommard on the same ranch.

"In the early days, frankly, we didn't know much about rootstocks other than things like tolerance for 'wet feet' or drought. To be honest, I, like a lot of people, thought that the real interest would be in how the new clones performed in California conditions. So I was a little surprised, even though I shouldn't have been, to realize that site and rootstock were at least as important as clonal material. Now, along with learning about the clones, we're also learning about, and trying to exploit, the subtler characteristics of each rootstock — its growth cycle, its relative fruitfulness, that sort of thing."

The vineyard has been in long enough that some characteristics are clear. "We have just begun to change cover crops," adds Mochizuki. "Where vines are vigorous, we put in a devigorating mix like Blando brome, Zorro fescue, and crimson clover. The roots of this mix really go down and take up water. For low vigor, we put in an organic soil builder mix of peas, beans, and oats."

Several important viticultural properties are rootstock-dependent as well. "Yields seem to be related to location (soil), rootstock, and irrigation," continues Mochizuki. "Lightest usually in the 1103, intermediate in 3309, and highest in the 420A. That 420A is tricky to farm. It needs a lot of input, such as extra potassium and crop thinning.

"With regard to irrigation, the 420A blocks get quite a bit more water than the 3309 blocks, which, in turn, get more water than the 1103. In 1998, the 1103 wasn't irrigated at all."

"We really are still figuring out how best to farm these new clones and rootstocks," says Kosuge. "We've had three strange growing seasons in a row; it seemed like just when we thought we had a handle on how these vines would behave, the next season would come along and throw everything we thought we had learned out the window."

The wines

The goal, obviously, is high quality wine. Here too, conclusions are hard to draw. "The best wines are not always from the same blocks," notes Kosuge. "It varies from year to year. There are certain traits that are consistent across vintages, for example, the 115 on 420A is always pretty tannic. I've got a pretty good idea of the basic characteristics of each clone. There is a clonal identity which is consistent from year to year. What varies is concentration and 'completeness.'

"If I had to generalize, I'd say that the 115 is usually brighter and more forward, especially aromatically. It has a more narrow focus to the flavors and firmer tannins. By contrast, both the 667 and the 777 are broader, with darker fruit flavors and fleshier tannins.

"Tannin and extract aren't always correlated with low yield. The 420A blocks are often dark, tannic wines, yet they often have the highest yields. Still, we are very careful about how heavily we crop the vines. Pinot Noir is probably the most yield-sensitive of all varieties. But measuring yield in tons per acre is nearly meaningless, except when measuring differences in an otherwise homogenous plot. I try not to think in tons per acre; pounds or clusters per vine, pounds per foot of trellis, or even pounds per cubic foot of root volume might be better measures of true yield. We haven't yet figured out the best index of yield, but we do know that it's easy to push Pinot Noir too far."

The new clones aren't treated any differently than other selections during vinification. "We try to make the best wine we can from each of our blocks," explains Kosuge. "But we also don't want to make all the wine the same way. We try different maceration techniques in order to have a variety of wines from which to build our blends.

"In terms of their gross chemistry, the Dijon clones are not that different from the older clones. But we are still exploring subtleties of flavor and aroma and how they respond to various treatments in the cellar. For example, the 115 in the 420A block has always been pretty tannic. In 1997, we tried an extended (five days at 60°F) pre-fermentation cold soak and a shorter post-dryness maceration to get softer tannins. It turned out to be just as tannic as before, so we tried the opposite approach and made it more aggres-

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sively in 1998 to maximize the tannin and extract for use in the blend. On the other hand, the same treatment on clone 667 from the 420A block gave a fatter, richer, more complex wine, so we're generally stuck with that technique.

"Now that we have some open-top, punch-down tanks, we'll see how all the wines respond to that treatment as well. It could turn out that the new clones really shine when punched down in open-top tanks. It could also turn out that they don't care what kind of tank they're in. In a lot of ways it's a process of trial and error — trying it different ways and seeing what we like best."

When evaluating the new clones, Kosuge says, "The 115 is pretty flexible. It does well in most sites and makes consistently good wines. It is equally good on the hill in sandy soil on 1103, down in heavier, wetter soils on 420A, and in clay on 3309. Both the 667 and 777 seem to do well on all three rootstocks (1103, 3309, 420A), but they vary more from block to block and vintage to vintage than 115.

"I think it's important to remember that while the new clonal material has great promise, what is more important is careful matching of rootstock and clone to soil and exposure, and farming the combinations sensitively. The new clones are not a magic bullet, any more than new trellis design, new rootstocks or tighter spacing are. The fact that they are highly regarded in Burgundy of course makes them attractive to us, but you have to remember that the criteria for selection in Burgundy are much different than they are here.

"An obvious example, but not the only one, is that early ripening is crucial in a short growing season, whereas it is not important, and in fact could be considered a liability, in a longer, warmer one." However, unlike in their earlier experiences of transplanting clones from one place to the next, Saintsbury and WVM have been very pleased with how the Dijon clones have performed in the new vineyard.

"I don't mean to suggest that Carneros will somehow turn itself into Burgundy by bringing in the Burgundian clones; far from it," Kosuge remarks. "Having these new clones just gives us more choices than before. It's still up to us to find the best ways to use them."

With the 1996 vintage, Saintsbury began producing a vineyard designated wine from the Brown Ranch. "It's our attempt to make a 'wine of a place,' and yes, it is comprised entirely of the Dijon clones. Brown is probably the best of our vineyards, but that is not just because that's where most of the Dijon clones are. Equally responsible for the quality are the soils and the care with which the ranch is farmed. At Brown, we have our best — so far — combination of site, rootstocks, and clones, coupled with a lot of viticultural care and skill. All those things together are what make the difference." ■

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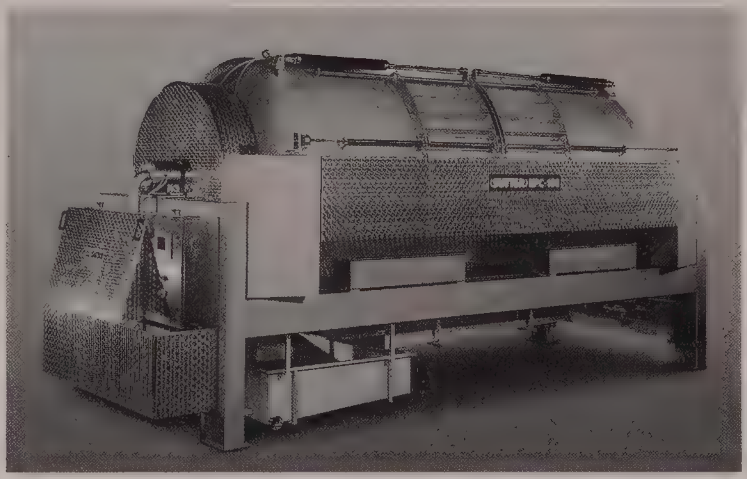

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Proceedings of 1998 seminar and workshop

BLACK GOO SYMPTOMS AND OCCURRENCE OF GRAPE DECLINES

Lucie Morton, Editor
International Ampelography Society
International Council on Grapevine Trunk Diseases

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Each contributor to the Proceedings came to California between 1995 and 1999 to study the vine decline problem and to participate in exploratory seminars, workshops, and field trips. Each author has a unique perspective on the problem. The work is ongoing and the goal is for this Proceedings to be a foundation for future discovery, not to achieve immediate consensus.

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Tax deferral of combined vineyard and winery operations

by L. Gregory Scott
PricewaterhouseCoopers LLP

IN the last 12 years, a drama of sorts has been played out between the Internal Revenue Service (IRS) and the California wine and vineyard industry. The IRS attempted to eliminate what had been clearly intended benefits of the cash method for farming operations.

In response to substantial changes in the tax law, which significantly changed the inventory costing rules for winery operations, the IRS organized a wine industry group that examined the returns of the majority of winery and vineyard operations in northern California.

This group's mission was to insure that wineries conformed to the "costly" uniform cost capitalization rules. These rules require all manufacturers to add to inventory many costs which wineries previously had been able to deduct. For wineries, the effect of these rules was usually quite large.

Additionally, the leadership of the IRS specialty group felt that combined and related winery/vineyard operations enjoyed too large a tax benefit for too long. They challenged the ability of combined and/or related winery and vineyard operations to deduct farming costs and not recognize any income related to the crop until the wine made from those grapes was sold.

Farmers have always been able to use the cash method for tax purposes even though farmers are in a "production" business. The reasons for this historically were to allow the farmer to use a simple method to calculate taxable income and not to burden farmers with cumbersome inventory accounting rules for the products they produce in the business of farming. Farmers had always enjoyed this clearly intended benefit.

The first narrowing of availability of this benefit was enacted in the 1976 Tax Reform Act. With this tax act, corporate-owned farms that were not "family owned" could no longer use the cash method for farming. However, non-corporate farmers, (excluding those that had been marketed as tax shelters) continued to be eligible to use the cash method, and even family-owned corporate farming operations continued to be eligible to use the cash method.

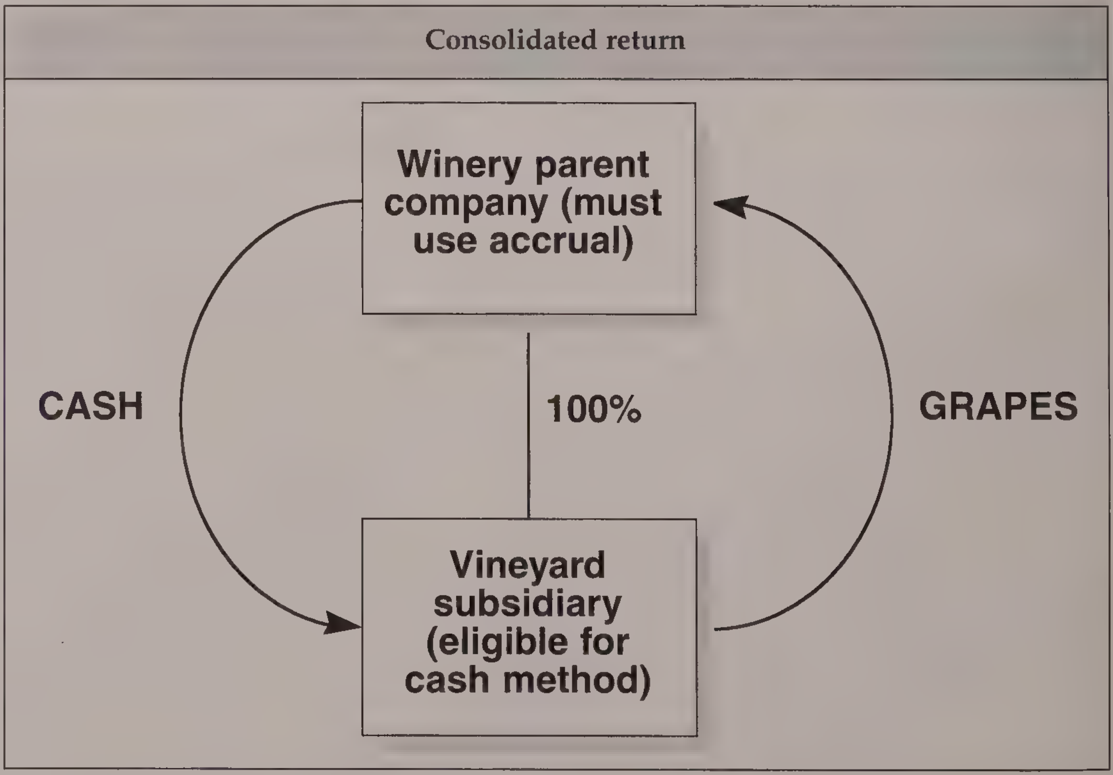
From 1976 until 1986, further changes were made, refining the exceptions to the ability to use the cash method, but none of them affected a closely held farm run by family members. Then in 1987, a dollar limit was set on a family-owned corporate farmers' ability to use the cash method. As a result of the 1987 tax act, family-owned corporations with gross receipts in excess of $25 million per year could no longer use the cash method for tax purposes.

Though these large family-owned farming operations were forced off of the cash method, they were initially given a permanent tax holiday on the adjustment necessary to convert and undo the benefits of the cash method. The adjustment required to convert from the cash to the accrual method was not included in taxable income as long as the size of the business operation did not decrease and it remained family owned. The holiday was changed in 1996 and now requires the amount to be included in taxable income, and spread over 10 years.

Those family-farming operations that were S Corporations or partnerships could still use the cash method regardless of gross receipts, but the IRS wine industry group next attempted to eliminate this benefit.

There are three basic ways that winery and vineyard operations under common control are structured in terms of their ownership. Depending upon how the ownership of the winery and vineyard operations are structured, different tax rules apply in determining how to achieve the maximum tax deferral from the use of the cash method for the farming operations. The three basic forms of ownership are:

1) a parent and subsidiary corporation


Consolidated return
Winery parent company (must use accrual)
CASH
100%
GRAPES
Vineyard subsidiary (eligible for cash method)

filing a consolidated return; (not a common form today for smaller operations),

2) a single entity with both winery and vineyard operations, and

3) brother/sister entities under common control.

The brother/sister could comprise any mix of organizational forms, usually with common if not completely identical ownership. One might be a partnership, while the other could be another partnership or an S corporation.

In the consolidated return setting, regulations provide guidance as to how and when the profit can be recognized in taxable income when one company in a consolidated return sells products to another company in the consolidated return.

In the past, the IRS' position was that the cash basis farmer, which was one of the companies in the consolidated return, could continue to deduct its farming costs and defer the gross proceeds from the sale of grapes to the winery company in the consolidated return, triggering or recognizing that profit as taxable income only as the winery sold the wine made from those grapes.

In the brother/sister setting, prior to the IRS wine industry group scrutiny, the cash basis vineyard entity sold the grapes to the winery under an installment sales contract calling for payment to the vineyard by the winery only at the time that the winery sold the wine.

The related party provisions in the tax code would preclude the winery from taking a deduction for the cost of grapes as part of cost of goods sold if it had not paid the related cash basis vineyard entity by the time the wine was sold. Thus, there was a clear safeguard in the tax code to preclude an indefinite deferral of the vineyard profit beyond the time the related winery sold the wine.

Finally, in the single entity approach, the tax rules provide and recognize that a single entity can operate multiple trades or businesses within that single entity and use a different method of accounting for each trade or business.

Other provisions of the tax code and regulations clearly recognized that farming and winemaking were separate and distinct trades or businesses. What was unclear, until regulations were issued by the Treasury Department with respect to its Uniform Cost Capitalization provisions enacted in 1986, was how a combined farming and manufacturing operation would deal with the interdivisional transfer of product.

In the regulations, the IRS defined a farming activity and a non-farming activity. A farming business includes the cultivation of land or the raising or harvesting of any agricultural or horticultural commodity, the raising or harvesting of crops, or harvesting of trees bearing fruits, nuts, or other crops, and so on.

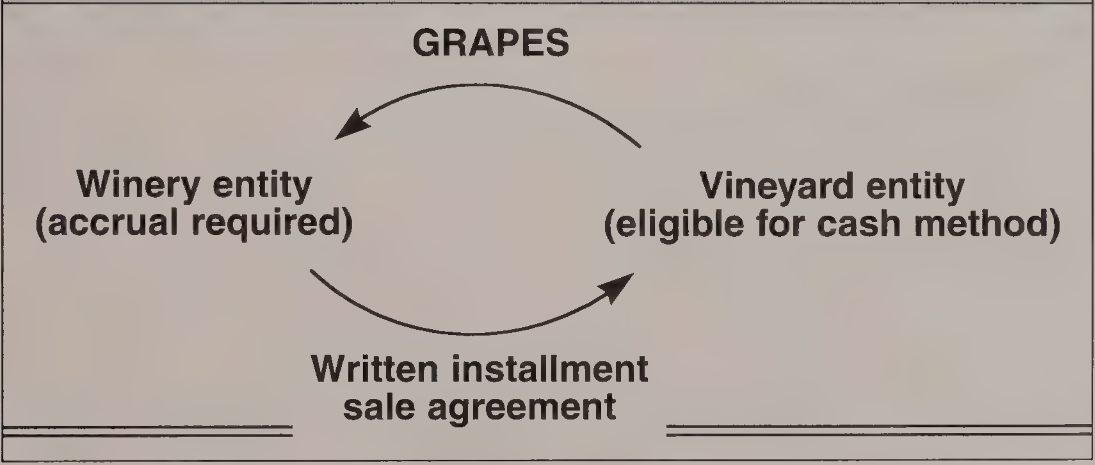
The regulations also state that the farming business includes the processing activities which are normally incident to the growing, raising, or harvesting of agricultural products, and thus, the picking, washing, and packaging of fruits and vegetables for sale would all be part of the farming business.

However, the regulations state that the farming business "does not include the processing of commodities or products beyond the state in which they were normally available as a farm product." The regulations include the example of growing wheat as a farming activity but the further milling of that wheat into flour and making that flour into bread are identified as non-farming activities.

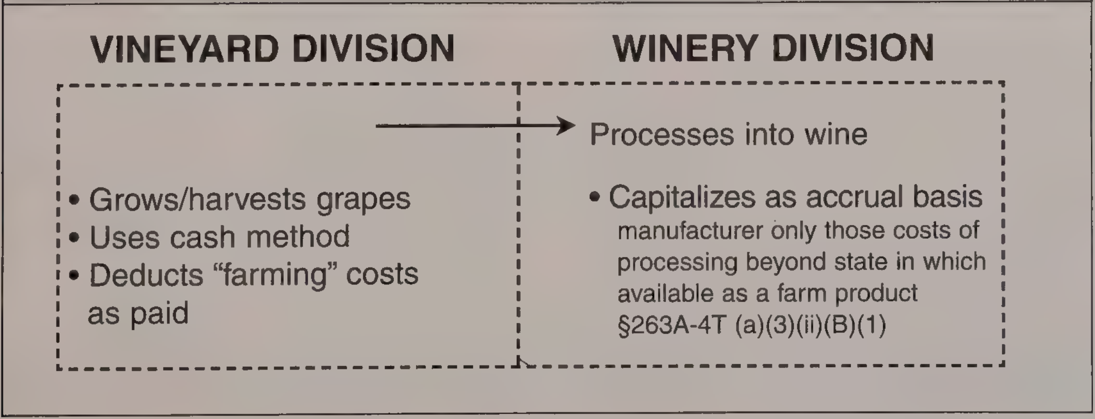
The rules clearly state that, when there are both farming and non-farming businesses in a single entity, taxpayers only have to capitalize (and not deduct) the costs of further processing the farm product beyond the state in which it is normally available as a farm product. Thus, before the IRS change of heart, it was felt to be generally clear that a combined vineyard and winery operation in a single entity — which because of its form or ownership was eligible to use the cash method for its farming activities and which had chosen to do so — could deduct all of the costs of growing the grapes. Only the post-harvest processing costs of crush fermentation, cellaring, ageing, and bottling would have to be capitalized. In essence, the winery would have no "grape cost" in its wine inventory produced from its own grapes for income tax purposes.

This enabled the combined winery and vineyard operation to be able to

Brother-sister approach


GRAPES
Winery entity (accrual required)
Vineyard entity (eligible for cash method)
Written installment sale agreement

Single entity approach


VINEYARD DIVISION
WINERY DIVISION
Processes into wine
• Grows/harvests grapes
• Uses cash method
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• Capitalizes as accrual basis manufacturer only those costs of processing beyond state in which available as a farm product §263A-4T (a)(3)(ii)(B)(1)

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deduct its crop costs up front. The income related to the vineyard activity was recognized as the wine was sold through higher gross margins for tax purposes because there was no grape cost in inventory.

Additionally, so long as one remained in the vineyard and winery business, one would always be "replacing" this deferral with a subsequent year's crop cost deductions. If, for example, one's average inventory turn was two years; the combined winery/vineyard operation would have what would be a quasi-permanent upfront tax deduction equal to two years of crop costs. This would shelter other income from the operation. As long as the company remained in business with the same level of inventory or more, the tax benefit of the upfront deductions of the farming costs would never be eliminated.

For example, a 100-acre vineyard with $3,000 per acre of crop costs and a two-year inventory would enjoy a $282,000 tax deferral.

100 acres X $3,000/acre crop cost
X 2-year inventory = $600,000.
Deferral ($3,000 x 100 x 2) X 47%
= $282,000 quasi permanent tax deferral

This represented a very valuable subsidy.

In all three cases, even though those in the industry believed the rules were very clear, the IRS wine industry group declared that the deferrals were "too long," "too much," and "too good."

Discussions with the IRS, pointing out that there was nothing in the tax code that put a time limit on the deferral (beyond the related party provisions mentioned above), did not dissuade the IRS industry group from its position.

All three of these approaches to enjoying this tax benefit were litigated in tax court; only one resulted in a published and unfortunately adverse decision.

In the first instance, a consolidated return case, the taxpayer was successful. The IRS wine industry group's position did not even have the support of those individuals in the national IRS office who had responsibility for rulings and regulations concerning consolidated return provisions. However, the wine industry group was able to get a technical advice memorandum issued by the inventory group at the national office disallowing benefits of the cash method.

When this case was before the tax court, the tax court judge made clear his displeasure with the government's attempt to "take away" the clearly intended benefits of the cash method. Within days of the tax court hearing and before an opinion was rendered, new consolidated return regulations were issued in proposed form by the IRS national consolidated return group.

The regulations included an example with a winery and a vineyard as separate companies in a consolidated return, and the result sought by the taxpayer in the case before the court was identified as the correct result that should be achieved under the deferred intercompany profit rules. One can only surmise that the clear displeasure of the tax court judge with the government's position caused the IRS to concede this case before the judge rendered his opinion, thus precluding the publication of a decision adverse to the government.

The government was more fortunate in the Oak Cross Vineyards case. There the tax court judge agreed with the IRS that the sale by Oak Cross Vineyards to Groth Vineyards (the winery) of its grapes on a deferred payment arrangement and the related deferral that Oak Cross Vineyards enjoyed did not "clearly reflect" income. This forced the partnership of Oak Cross Vineyards to change its accounting method for tax purposes from a cash to an accrual method causing it to recognize the income from the sale of grapes in the year harvested.

While the judge offered no logic for this departure from the long-standing ability of farmers to sell their crops on an installment method, he clearly agreed with the IRS that the benefit should not be enjoyed. This was even in spite of earlier cases that indicated that the congressional provision for farmers to use the cash method was deemed to clearly reflect income.

When this case was appealed to the Ninth Circuit, the Appellate Court said that it could not find that the tax court judge had clearly erred. While new arguments were raised at the appellate level that had not been raised at the tax court, the appellate court said that these were issues that should have been raised at the tax court level and unfortunately it could not consider them on appeal. The Appellate Court inferred

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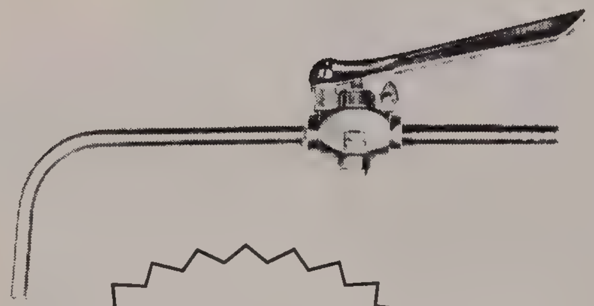

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that, had these issues been raised before it as the trial court, it might have reached a different result than the tax court had reached, none the less, it allowed the very surprising tax court ruling to stand.

In the Ferrari-Carano case, again no published opinion exists because the IRS conceded the case prior to the time the judge rendered his opinion. Ferrari-Carano had followed the single entity approach: deducting all crop costs and transferring the grapes from the farming division to the winery division of the single entity resulting in no grape cost in inventory. Again the IRS argued that the result was too good; that the benefit was unintended; that the vineyard and winery were not separate trades or businesses, but were really a single business enterprise. The IRS group tried to overturn the result of its own regulations.

We understand that the group even attempted to have the regulation rewritten to reach a different result. Fortunately this request was denied and now the IRS, in a published news release, has formally conceded that the approach taken by Ferrari-Carano and others in a single entity achieves the result that we and many others believed was the right answer all along.

Cash-basis farmers can deduct their farming costs as paid and only need to add to inventory and defer those costs of processing the crop beyond the state in which it is "normally" available as a farm product (*i.e.* grapes) until the wine is sold. This means combined operations that choose to operate in a single entity have certainty. If properly elected, they can deduct farming costs if they are eligible to use the cash method. They will then build up a quasi-permanent deferral of deducted crop costs equal to their average inventory turn.

For example, if you have 200 acres of vineyards, incur $3,000 per acre of crop costs and age your wine on average for two years, you would build up a $1.2 million deferral which would not reverse so long as you remained in business. This represents a $564,000 quasi-permanent tax deferral.

There are generally ways for winery and vineyard operations that currently exist as brother-sister entities to combine into a single entity on a tax-free basis. This will ensure that they can enjoy the long-standing congressionally-intended benefit that a farmer should be able to deduct at the time paid the costs incurred in farming and only recognize the profit at the time the resulting items made from that farm product are sold, even if one further processes their farm product This is clearly a major win for the industry and brought to a conclusion more than 10 years of controversy between the industry and the IRS over this issue. ■

A tax partner with PricewaterhouseCoopers, L. Gregory Scott has 24 years experience in public accounting, particularly federal, multi-state, and foreign taxation for business entities and individuals. He has extensive experience in the wine industry and teaches Taxation and Accounting for Wineries/Vineyards at UC Davis.

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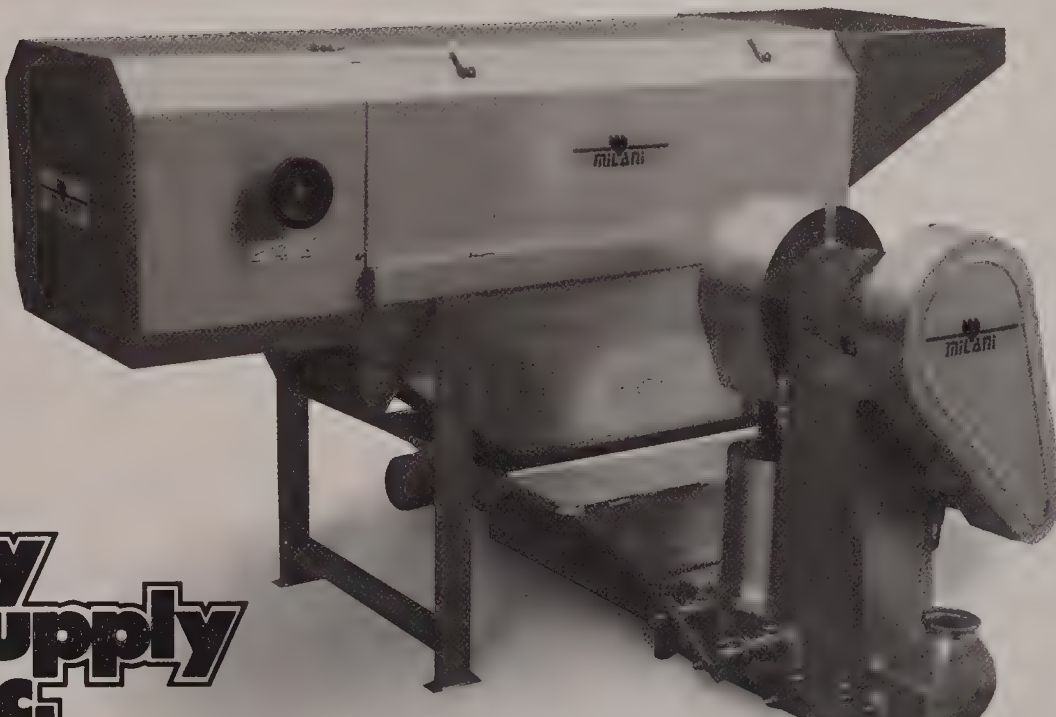

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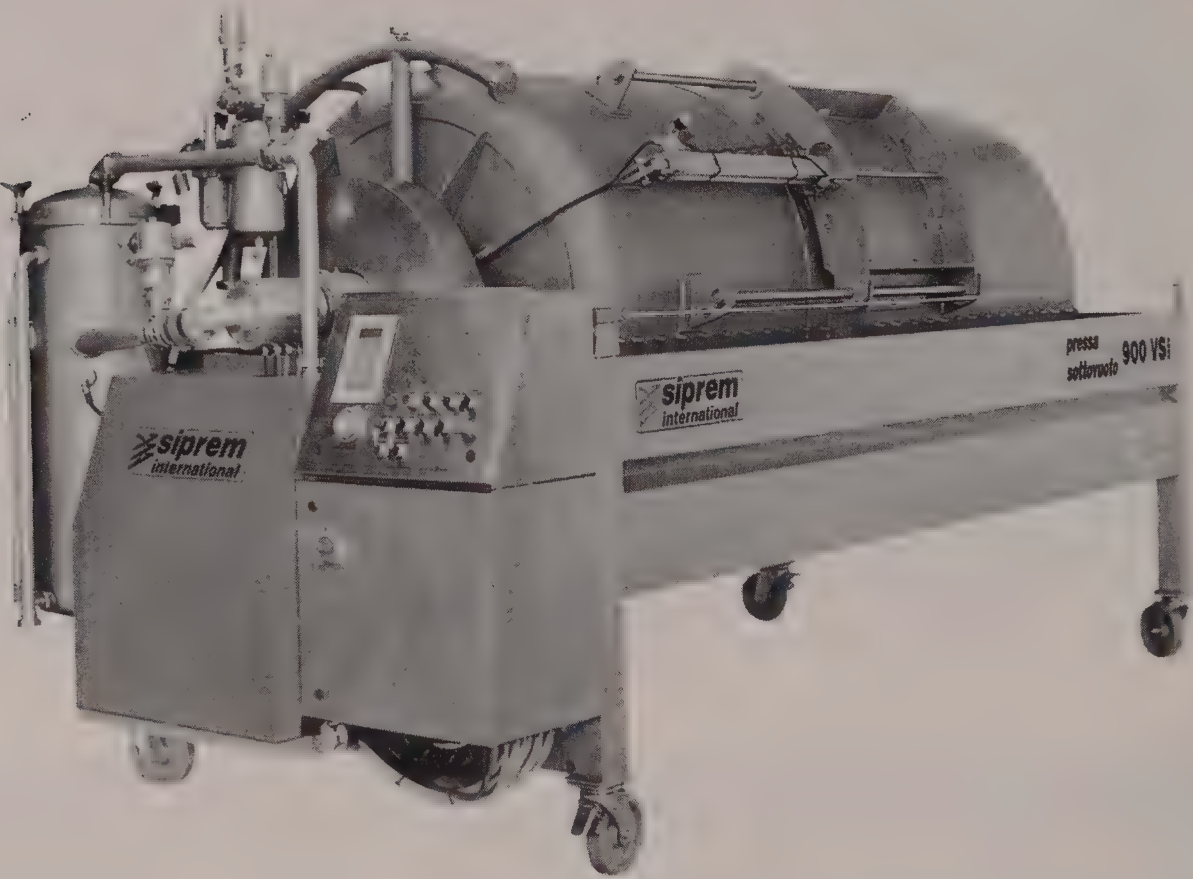

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Rapid propagation of grape planting stock

**by M. Andrew Walker,
Deborah A. Golino
Department of Viticulture & Enology,
Foundation Plant Materials Service
University of California, Davis, CA**

A thriving international market for wine and grapes has resulted in an explosion in vineyard plantings in many parts of the world. One of the consequences in some countries has been a shortfall in desirable planting stocks. This is especially true for countries with strict quarantine regulations governing the importation of grapevines. In those countries, it is necessary for the domestic nursery industry to respond to demand for scarce varietal and clonal selections, or new rootstocks, with techniques that allow the rapid expansion of propagating stock.

Cirami and Ewart (1995) were referring to clonal evaluation in the following quote, but the statement is equally true for new varieties or rootstocks.[6] "The identification of superior clones without a mechanism of vine certification and multiplication can lead to enormous frustration in the wine industry. The vine grower learns that improved planting material is available, he is just unable to obtain it."

Both the slow movement of new introductions through quarantine and certification programs and the relatively slow process of grape propagation via dormant cuttings are responsible for this frustration. There is great interest at this time in any technique that might speed up the process by which new materials are made available to growers. This is particularly true in California, where the current planting boom has prompted accellerated acceptance of some of the rapid propagation techniques.

California planting boom

The demand for grape planting materials is at an all time high in California. New vineyards are being planted in all areas of the state, and thousands of acres of vineyards once planted to the phylloxera-susceptible rootstock AXR1 continue to be replanted each year. Nurseries are struggling to keep up with demand.

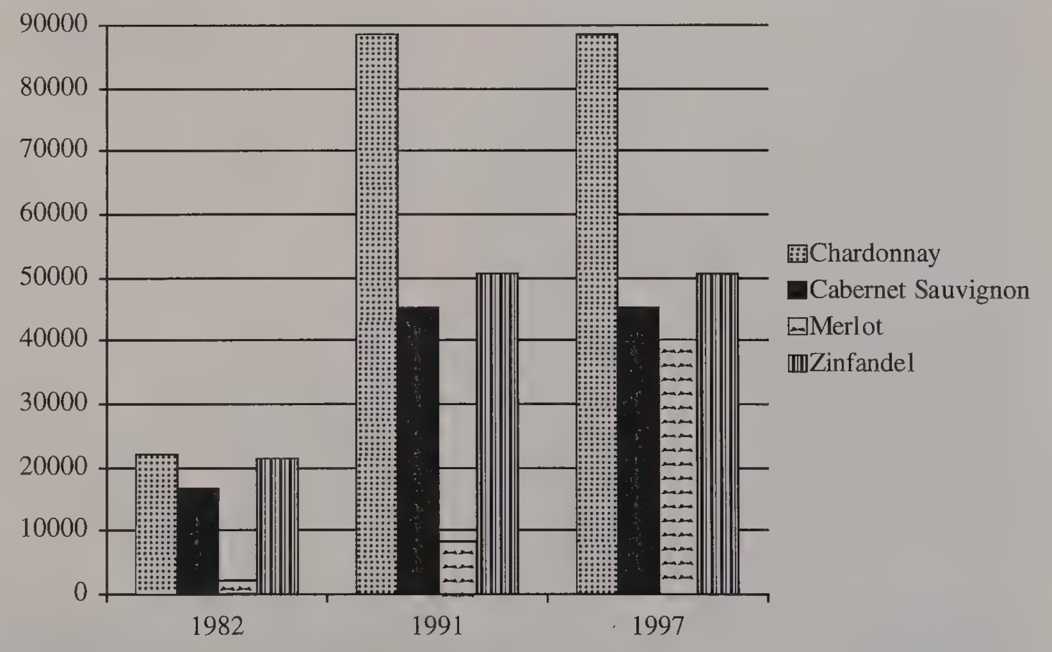
The California Department of Food & Agriculture's Agricultural Statistics Service tracks the grape acreage by variety and region. These records provide us with some statistics about the extent of the current planting boom, although records are reported for the previous year, and by some accounts (California Association of Winegrape Growers 1998), they may underestimate acreage of some varieties by as much as 40%.

According to these reports, four widely planted varieties have experienced remarkable growth in California (Figure 1). In 1982, there were 22,050 acres of Chardonnay, 21,289 acres of Zinfandel 16,640 acres of Cabernet Sauvignon, and 2,147 of Merlot. By 1991, there were 56,609, 34,369, 34,176, and 8,188 acres of each, respectively. The 1997 acreage records list 88,517, 50,498, 45,307, and 38,522. These four varieties now account for 54.7% of the 407,230 winegrape acres in California recorded for 1997.[2]

In addition to the increase in acreage of these major varieties, some varieties, which have previously been planted to a limited extent, are suddenly becoming more popular. For example, there is increasing interest in Sangiovese and Syrah. Prior to 1982, there were respectively 25 and 89 acres, of these varieties in California. By 1991 there were 232 and 413, and the acreage records for 1997 list 2,498 and 4,277. This represents a 50-fold increase in Syrah and a 100-fold increase in Sangiovese.

In addition to the demand for varietal grape materials from nurseries, the issue of clonal selection has become increasingly important to California growers and winemakers. It is not unknown in California for wineries to pay a premium for particular clones and to contract with growers based on the clones planted in selected vineyards. There is particular interest in clones from France and Italy,

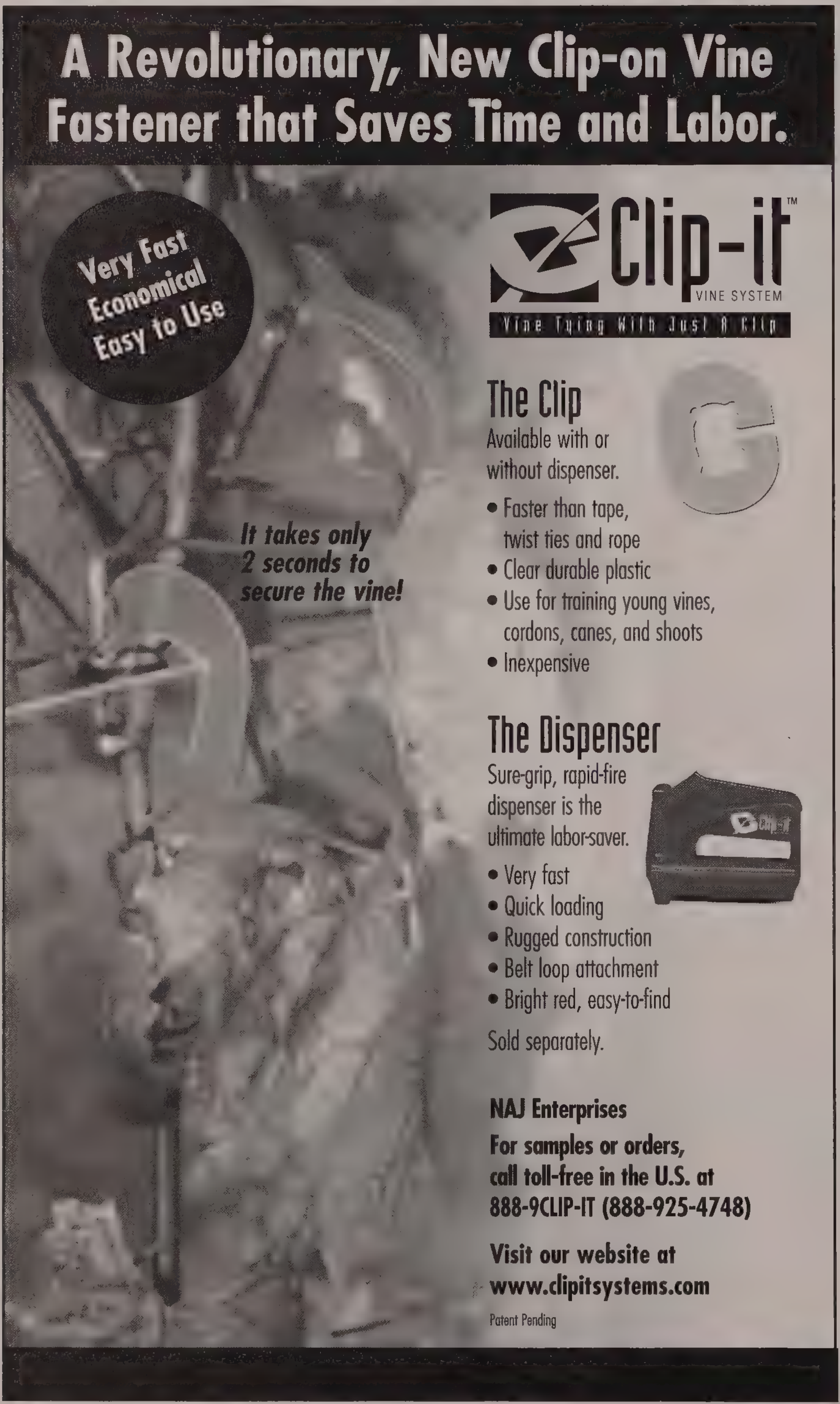
**Figure 1
Change in acreage of select winegrape varieties in California since 1982.
Data from California Agricultural Statistics Service.**



which are new to the U.S. These clones have been arriving in the state via legal and illegal channels and are now in great demand.

Although little data exist regarding how well these clones perform in California, they are being utilized in replanted vineyards and newly developed sites at an increasing rate. Several California nurseries are now collaborating with French and Italian nurseries, as well as vine improvement centers, such as ENTAV and Rauscedo, to provide California growers with better access to these clones. These joint ventures will increase the rate of new introduction, resulting in higher demand for these "new" products, and increased pressure on nurseries for rapid propagation.

The California table grape industry is especially quick to change to new varieties. The varietal loyalties of winemakers do not apply; successful new releases by breeders can become popular and even dominate the market in a very short period of time. Propagators need to respond to these table grape demands with very quick production schedules.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Economics and global demand for wine and fruit are fueling huge new plantings in California. But even when the demand levels off, there will still be a strong need for planting materials beyond this current generation of vineyard expansion.

For example, a majority of California's vineyard acreage is currently planted without rootstock. These vineyards are on sandy soils in the Central Valley and are rarely affected by phylloxera. However, nematodes, most notably an array of root-knot species (*Meloidogyne*), build up to high levels on these soils, and the establishment of second generation vineyards on such sites will require use of nematode-resistant rootstocks.

Further, California is only in the early stages of regional evaluation of varieties, clones, and rootstocks. As new materials are tested, it can be anticipated that vineyards will need to be replaced to keep up with newly defined regional markets. Finally, new generations of rootstocks are being produced for California soils to resist specific pest complexes.[19] The demand for these rootstocks will increase as sites are replanted to second and third generation vineyards.

Role of new propagating techniques

Traditional grape propagation techniques utilize mother vines, from which dormant cuttings are taken for rooting, bench grafting, or field budding. Mother vines are generally planted from dormant rootings or potted plants and require about three years to produce generous amounts of cuttings.

When new clones or varieties are released from breeders or from quarantine programs, there is very little wood available for distribution and a variety of techniques have been employed to produce commercial amounts of planting stock over a short period. Many of these techniques are labor and technology-intensive, and their cost may not compete with that of traditional methods of propagation when source materials are not limited. However, when planting stock of new varieties, clones, or rootstocks is limited, rapid propagation techniques can speed up release and offer large economic advantages.

The introduction of new planting materials through vine improvement associations is a major limitation to grape industry utilization of new clones, varieties, and rootstocks. Many of the rapid propagation techniques were developed by these associations to speed up the release of material and to avoid the spread or infection of certified material with pests and diseases.

Mist propagation of herbaceous cuttings

Rapid propagation techniques most often use herbaceous plant material ranging from apical meristems to partially lignified, 25 cm shoot cuttings. Propagation from herbaceous material must be done in very high humidities utilizing mist propagation or tissue culture techniques.[9]

The simplest procedure for the multiplication of an actively growing plant involves making multiple green cuttings and rooting them under mist propagation. Mist propagation requires a very fine mist or fog of high quality water, bottom heat, and a porous propagation media to provide the high humidity, warmth, and oxygen needed for leafy cuttings to root. Cuttings are taken from actively growing plants and work best with at least two nodes and two lateral (prompt) buds.

A balance must be achieved in tissue maturity. Although the mother vines should be actively growing, cuttings from the most succulent tissues often fail to root. Conversely, once the cuttings become too greatly lignified, the lateral buds have often abscised, and cuttings may fail while the dormant (latent) bud goes through a required dormancy before growing.[13]

In the field (UC Davis, CA), suitable tissue can be collected from most grape selections between early June and late August. Alternatively, mother vines can be maintained in a greenhouse and will provide excellent cuttings for propagation as long as there is sufficient light for active growth. We have had excellent success propagating from seedlings and newly rooted plants as long as these plants are kept growing actively with supplemental light and heat as needed.

There are many appropriate media for mist propagation including vermiculite, perlite, sand, rock wool, and cellulose sponges. These media must maintain moisture and provide oxygen root development. By itself, vermiculite, a micaceous mineral expanded with heat, can become too wet and compacted over time, leading to low oxygen levels and poor rooting. Perlite, a gray-white siliceous material mined from lava flows, which is also expanded with heat, holds less water and provides a less "soggy" environment, but provides poor cation exchange leading to poor nutrient uptake of rooting cuttings. We have used both one-to-one mixes of vermiculite and perlite and pure perlite mixes with great success. Coarse sand can also be

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Some grape varieties and rootstocks will produce roots (under mist propagation) but fail to establish after potting in greenhouse soil mixes or upon transfer to the field. Such failure is often due to root damage upon removal from the propagating substrate. In these cases, cellulose sponge or rock wool are better media, because they maintain strong root attachment to the cutting stem, resulting in greatly improved rooting. We have increased the establishment of new plants from green cuttings of hard-to-root *Vitis* species like *V. cinerea* and *V. monticola* by three to five fold with cellulose sponge cores (Grow-Tech Techniculture, San Juan Bautista, CA).

Rooting hormones do not dramatically improve rooting success of green cuttings from most *V. vinifera* varieties. However, they are very beneficial for rooting other *Vitis* species and some rootstocks. The auxins indolebutyric acid (IBA) and napthaleneacetic acid (NAA) are commonly used as five- to 10-second dips at 1000 to 3000 ppm.

Warmth, humidity, and light are critical for success with mist propagation. Temperatures in the 28° to 30°C range are ideal. Humidities are kept constant and high using either electronic timers that discharge about five to 10 seconds of mist every five to 10 minutes or moisture-sensing devices, such as the "mist-a-matic" (Hummert Intl., Earth City, MO), that detect moisture levels below a set point and discharge the mist to compensate.

Moisture sensing devices can be difficult to set up but more than compensate for this effort by preventing moisture levels from getting too high during cloudy weather or evenings. Excessive water logging can be a serious limiting factor to success with mist propagation. As long as humidities are controlled, high light levels produce optimum rooting. Normal greenhouse shading levels with adjustments for climate are needed.

Green-grafting

Herbaceous grafting under greenhouse and in vitro conditions has been practiced with cucurbits and solanaceous plants for many years.[14, 9] This process involves placing a shoot tip or meristem on the freshly cut surface of a seedling epicotyl, where it is held in place while it heals under high humidity conditions. Green-grafting has also been done in the field by grafting green scions or buds onto green shoots. This technique has worked with grape, but has not been widely utilized.[5]

Grapevines have been green grafted under greenhouse and *in vitro* conditions. Green-grafting has the advantage of being easy, having high success rates, and is capable of overcoming the graft incompatibility sometimes experienced between distantly related *Vitis* species.[1,18] This technique has been used to screen for virus resistance and more recently as a means of evaluating virus presence in certification programs.[17,20]

Green-grafting has also been promoted as a method to rapidly produce grafted plants. In this process, greenhouse-grown mother vines of rootstocks and scions can supply the needed cuttings for year-round grafting. Plants can also be produced without being exposed to the field, greatly reducing the chance of virus and pest infection. Several California nurseries are producing plants with this process.

Success with green grafting is very dependent upon high-quality cuttings. We have obtained the best success with partially lignified cuttings from field-grown mother vines. It is possible to have good success with cuttings from greenhouse-grown mother vines, but only when conditions are optimized with high light, moderate humidity, proper fertilization and nutrient balance, and fungal and insect pest control. It is extremely difficult to produce high-quality cuttings during the winter months even with supplemental light and heat. In addition, greenhouse mother blocks are most successful when they are regularly repropagated into fresh support media.

The scion cuttings should have a full-sized leaf, which is trimmed by about half, and an active lateral (prompt) bud. The rootstock cuttings need to be at least 25 cm long, so that adequate spacing between the roots and graft union can be achieved for field planting, and should also have a trimmed leaf and an active lateral bud.

Most often the rootstock and scion cuttings are fitted together with a cleft graft which makes a slit down the center of either the rootstock or scion, while a long tapered wedge cut is made on the opposing piece. Razor blades or scalpels are ideal for making this graft, and the process has also been mechanized (La Haltogel Greffenvert, Mumm & Perrier-Jouët, Vignoble et Recherches, Épernay, France). Parafilm, perforated plastic bandage tape, or small clips can be used to hold the rootstock and scion in place while the union heals.

Once the graft has been made, the union must be healed under conditions of moderate light, high humidity, and good air circulation. The grafted plants can be placed in perlite, rock wool, or cellulose sponge. One technique recommends that the union be healed by placing the grafted plants into a small closed plastic tent with moderate temperatures and low light. Over several weeks, more light is provided and humidities are decreased. Fungal diseases thrive in this environment, and they must be controlled with fungicides. Alternatively, the grafted plants can be healed and rooted under the mist propagation conditions described above. In cases where rootstocks or species are more difficult to root, it is advisable to pre-root these cuttings under mist propagation prior to grafting.

Over a two- to four-week period, the union heals, the rootstock roots, and the plant is ready to establish for a month or more under greenhouse conditions. Following a "hardening-off" period, the green-grafted plants can be planted in the vineyard or continue growing in the greenhouse to become dormant before planting the following year.

Green-grafting produces an excellent graft union which appears more seamless than traditional bench-graft unions made with omega or dado saw cuts. However, after several years no apparent differences can be detected in health or nature of the graft union when compared with traditionally grafted plants. At the time of field planting, green-grafted plants normally have limited carbohydrate reserves and relatively weak root systems; they require careful care and watering for successful establishment.

Tissue culture propagation

Grapevines can be propagated fairly easily in tissue culture. Meristem or shoot tip tissue culture has been used to eliminate grape viruses in certification

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Cot (Malbec) N	46,595
Gamay N	222,358,656
Gewurtztraminer B	47
Grenache N	70,139,362,434,513,515
Grenache Blanc B	141
Marsanne B	574
Melon B	229
Meunier N	864
Merlot N	181,182,342,343,346,347,348,398
Mourvedre N	233,369,450
Muscat à petits grains blancs B	453
Nielluccio N	903
Petit Verdot N	400
Pinot Blanc B	54
Pinot Noir N	115,375,459,667,777,828
Pinot Gris B	52
Rousanne B	468,522
Sauvignon Blanc	108,161,317,376,530
Semillon B	173,315
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Tannat N	474
Tempranillo N	776
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programs. Grapes have also been grafted under tissue-culture conditions to detect and evaluate resistance to viruses.[18] Tissue culture has also been suggested as a means for rapidly propagating scarce or hard-to-propagate planting stock of clones or varieties.[11,10,8] The techniques are straight forward,[12] but they are practiced skills requiring substantial amounts of time and labor.

For routine elimination of viruses, shoot tips can be taken from actively growing plants in the greenhouse or field. As in the case of mist propagation, the high-quality of the plant material from which the tips are cut is essential to the success of the work.

Under sterile conditions, fresh cut tips are gently sterilized in a mild bleach solution with a few drops of detergent, rinsed, and then excised under a dissecting microscope.

The tips are placed on an initial media for six weeks, followed by rooting media. After about a month on rooting media, most shoot tips will be ready for transplanting. The roots are trimmed, and the young plants are transferred to sterile soil mix in a closed container. Air circulation is gradually increased after new growth occurs. After about one month, the plant is ready to be moved from the growth chamber to a greenhouse.

When plant material is severely limited or in high demand, additional meristems could be taken from these plants at this time. However, it would be more economical, in terms of time and money, to begin mist propagating herbaceous cuttings at this point. In most cases, it is more practical to begin mass propagation after disease testing has insured that virus has been eliminated.

ELISA and PCR testing can be used as the plants become established in the greenhouse. Woody indexing, still the definitive virus disease tests for the California registration and certification program, can begin during the first dormant season following tissue culture; normally the new tissue culture explants (TCEs) are at least six months old before they are woody indexed. We have found that initial screening of plants with laboratory tests allows us to eliminate some of the TCEs from the secondary testing process.

Green-grafting for virus indexing has proven useful to many labs for virus disease testing.[20] It has not proved practical in our hands. Although some tests can be run more quickly with green-grafting, the technique requires extremely high quality, year-round greenhouse space and is very labor-intensive.

Further, the green-grafting technique is not accepted by the California Department of Food & Agriculture or the U.S. Quarantine officials as a substitute for woody indexing, thus there are regulatory barriers to its use. It is probably most valuable in climates where the woody field index cannot be accomplished routinely. In Davis, the woody field index produces reliable results in two years, and winter cold is not a factor in completing the test.

We expect the most rapid progress in shoot tip culture is the elimination of viruses to come from developments in PCR detection of grapevine viruses, which should result in early, accurate screening of TCEs for disease. Ultimately, these PCR tests are likely to eliminate the need for either woody or green-graft indexing.

In vitro-grafting as a tool for propagation can be done in a similar manner to the green-grafting described above for virus.[4] For difficult to root *Vitis* species and hybrids, it is possible to optimize rooting and cultivation treatments *in vitro* to an extent

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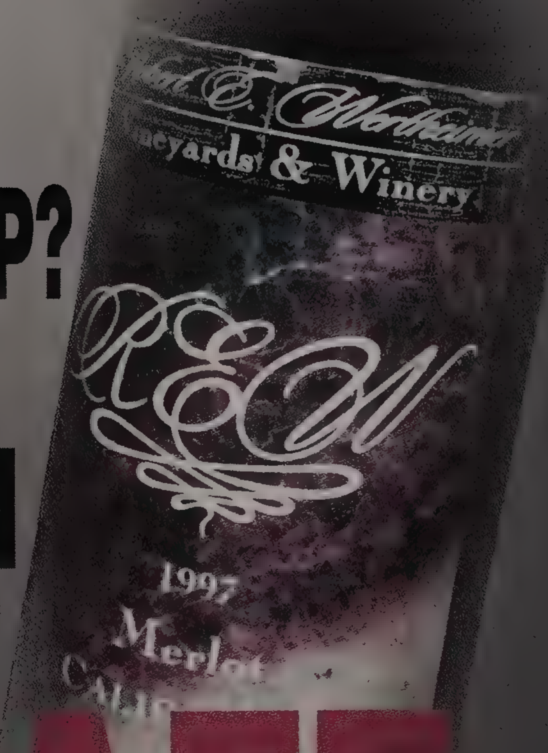

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that is impossible on a mist bench. Some countries (Chile and South Africa, for example) that have established strict phytosanitary rules for grapevine importation have made it relatively easy for *in vitro* plants to pass through quarantine. By establishing a new selection in tissue culture, an importer might save months or even years of time that would be lost before traditional materials cleared quarantine.

Outlook for rapid propagation methods

Rapid propagation methods are very important when plant materials are limited due to the scarcity of a clone or variety or due to dramatic expansion in acreage. Much of the grape-growing world is currently experiencing both of these circumstances. New clones and varieties are in high demand, and there seems to be boundless demand for the fruit from new wine and table grape vineyards.

The most important aspect of the rapid propagation methods discussed above is their ability to quickly provide relatively large amounts of planting stock to grapegrowers. However, these techniques are rarely competitive with traditional bench-grafting methods. The production of green-growing bench-grafts from dormant cuttings requires about eight to 10 weeks from grafting to field planting. It is rapid, provides high- quality planting stock, and can be relatively inexpensive. However, this technique depends on adequate numbers of mature mother vines of the needed rootstocks and scions, and these require three to four years to reach maturity in terms of their wood production.

Rapid propagation methods allow growers to get new planting materials two years earlier than they would be available via traditional propagation methods. However, there are potential problems with these techniques. First, there are great differences in rapid propagation practices compared with traditional techniques, and therefore knowledge gaps could lead to uneven plant quality.

The second problem relates to growers and their ability to alter establishment practices to deal with a planting stock with lower carbohydrate reserves and with much less tolerance for uneven irrigation or rainfall. It is also important to time plantings of these rapid propagation materials so that there is sufficient time for roots to develop and lignify and for basal dormant (latent) buds to complete maturation, so winter cold damage is prevented.

There are other problems coincident with rapid expansion of vineyards. Limited planting stock and high demand have led to errors in labeling and distribution. The quality of planting stock can often be uneven, as demands on nurseries outstrip the normal limits to their production capacity. Growers are also less inclined to check materials and may be less likely to demand high quality when they are desperate to plant.

Rapid expansion in vineyard acreage also brings many new growers into the grape business, often without the knowl-

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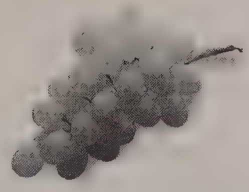

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edge or background to handle planting stock properly. Instructions from nurseries and viticulturists regarding storage and handling before planting, soils, proper hole size, irrigation schedules, fertilization, protection from vertebrate and insect pests, and training may not be understood or followed. Rapid vineyard expansion also brings great increases in diseases such as young vine decline, a complex of wood-rotting fungi (*Phaeoacremonium* spp.), that, when associated with weakened planting stock or poor vineyard establishment, can damage vines.[15,16]

Whether purchasing traditionally or rapidly propagated planting stock, the grower is well advised to make contact with highly regarded and trusted nurseries. Close associations with nurseries will result in better monitoring of planting stock and/or avoiding improper grower practices that result in poor vineyard establishment.

It is doubtful that rapid propagation techniques will supplant traditional grafting and propagation methods; however, these techniques can provide scarce materials in a more timely fashion and will greatly advance vine improvement and certification programs. Rapid propagation will always be more common during periods of burgeoning vineyard expansion. These materials can meet grower's needs, but care must be exercised to meet the requirements of such planting stock. ■

Edited from presentation to the Tenth Australian Wine Industry Technical Conference, Sydney, Australia, 1998.

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PART II

BALANCING Yield and Quality

How yield and quality are related within a growing region

by Jordan Ross

One myth in grapegrowing and winemaking has been that low yields produce the best grapes and wine. But the truth is, within every growing region, there is a range of grape yields which will produce quality wine.

Jacques Seysses of Domaine Dujac explains his experience with Pinot Noir in Burgundy: "Sometimes high yield goes with quality, and sometimes low yield goes with quality. If you look at the 1970s, the two lowest yields were 1975 and 1978; one vintage was the worst and one the best." So the reality is not as simple as the myth would have us believe.

Recent vintages in Burgundy demonstrate that high-yielding vintages can produce very good quality. As Etienne Grivot (Domaine Grivot) notes, "In 1996, we had a larger yield than in 1995, and it shows that it is not absolutely necessary to obtain a low quantity to obtain high quality wine. In 1996, all aspects were good from beginning to end, so it was possible to obtain optimum wine with 40 hectoliter per hectare (hl/ha), in premier Cru and Grand Cru vineyards versus 30 to 32hl/ha in 1995." For Grivot, the quality level and ageing potential of the two vintages was about the same, he adds, "But their personalities were different; 1995 was rather austere, and 1996 was opulent and elegant."

"We had double the crop in 1996 that we had in 1995 (20hl/ha in 1995 and 40hl/ha in 1996)," recalls Dominique Lafon (Domaine Comte Lafon in Meursault). "They were very different vintages but of equal quality."

Lafon points out that low yields do not guarantee quality: "You might have a very small crop with terrible wines. The best recent example in Burgundy is 1981, which was a small crop and not very good — it was unripe."

Lafon concurs with Seysses that there is a range of crop levels which will produce quality: "You can have the same level of quality whether you are cropping 20hl/ha or 35hl/ha." Seysses adds that, while in general, larger berries do dilute flavor, there are exceptions. "Even though we aimed for the same low production, in 1995 the average weight of a bunch of grapes was 75 grams, and in 1996 it was 120 grams per cluster — there were larger berries and more clusters. The weather conditions were ideal to make great quality despite quantity."

Jean-Michel Cazes (Lynch-Bages) states that high yielding vintages in Bordeaux can also yield high quality. "There is definitely not a relationship between quantity and quality as long as the yield is kept within a reasonable range. The best vintages of the past in Bordeaux — 1982, 1985, 1989, and 1990 — were the highest yielding. The lowest yields of the 1980s — 1984 and 1987 — were the worst vintages.

"I am not saying that it is a rule that you must have high yields. I am saying that quantity and quality are not contradictory, that just because you produce a small volume doesn't mean you make better wine. I remember a time when Chateau Latour had the highest yields of the commune of Pauillac and made the best wine. Latour was kept as a garden; it was absolutely perfect, not one missing vine. I wish that people who write about low yields would look into this."

How yield and quality are related between growing regions

It is misleading to superimpose yield levels from one growing region onto another because each region has its own parameters. Paul Pontallier at Chateau Margaux notes, "yield is one important factor of quality, not only in Bordeaux, but everywhere in the world — but it is not necessarily the same limit everywhere." The limit depends on factors such as climate and grape variety.

Ted Lemon of Littorai Wines (St. Helena, CA) explains the difference between warm and cool growing regions: "In warmer climates, with more days of direct sunlight, a larger crop can hang and ripen, and the vine won't struggle. In vineyards with more northerly climates, there are fewer days of solar exposure. The same size crop will overload and stress the vine, making it unable to produce a quality crop."

Dr. Nick Dokoozlian (UC Davis Department of Viticulture & Enology) contrasts the conditions in California with those in France. "Look at the huge difference in climate, California is 25% to 30% warmer in its premium growing regions. California generally has more stable weather conditions and the latitude is different, giving greater day length and sun exposure. The point is that all of the conditions in California are conducive to vegetative growth, while the conditions in France are much less conducive to such growth."

Christian Moueix (Chateau Petrus) contrasts Bordeaux with California — same grape varieties in different climates. "In very hot vintages in Bordeaux — such as 1947 and 1989 — we can afford slightly higher yields; but to make a good wine with the weather conditions we have in Bordeaux, which is always limiting in terms of heat, it is critical to keep yields lower. In Bordeaux, we cannot produce good wines above 4.0 tons per acre (TPA); 60hl/ha, and we cannot produce great wines above 3.5 TPA (50hl/ha).

"The top equilibrium for me in Bordeaux is between two and three TPA. In California, I think the fact that we can achieve higher yields is due to the climate. There is a completely different weather pattern and different quality of the soils. I think we need bigger yields to make better wine. At least in the Napa Valley soils I know, which are rather rich soils, at 2.5 TPA, during my first years at Dominus, the wines were too tannic. I find the equilibrium is roughly one ton above Bordeaux — 3.5 TPA (50hl/ha) is the best, and we can produce good wines up to 5 TPA (70hl/ha)."

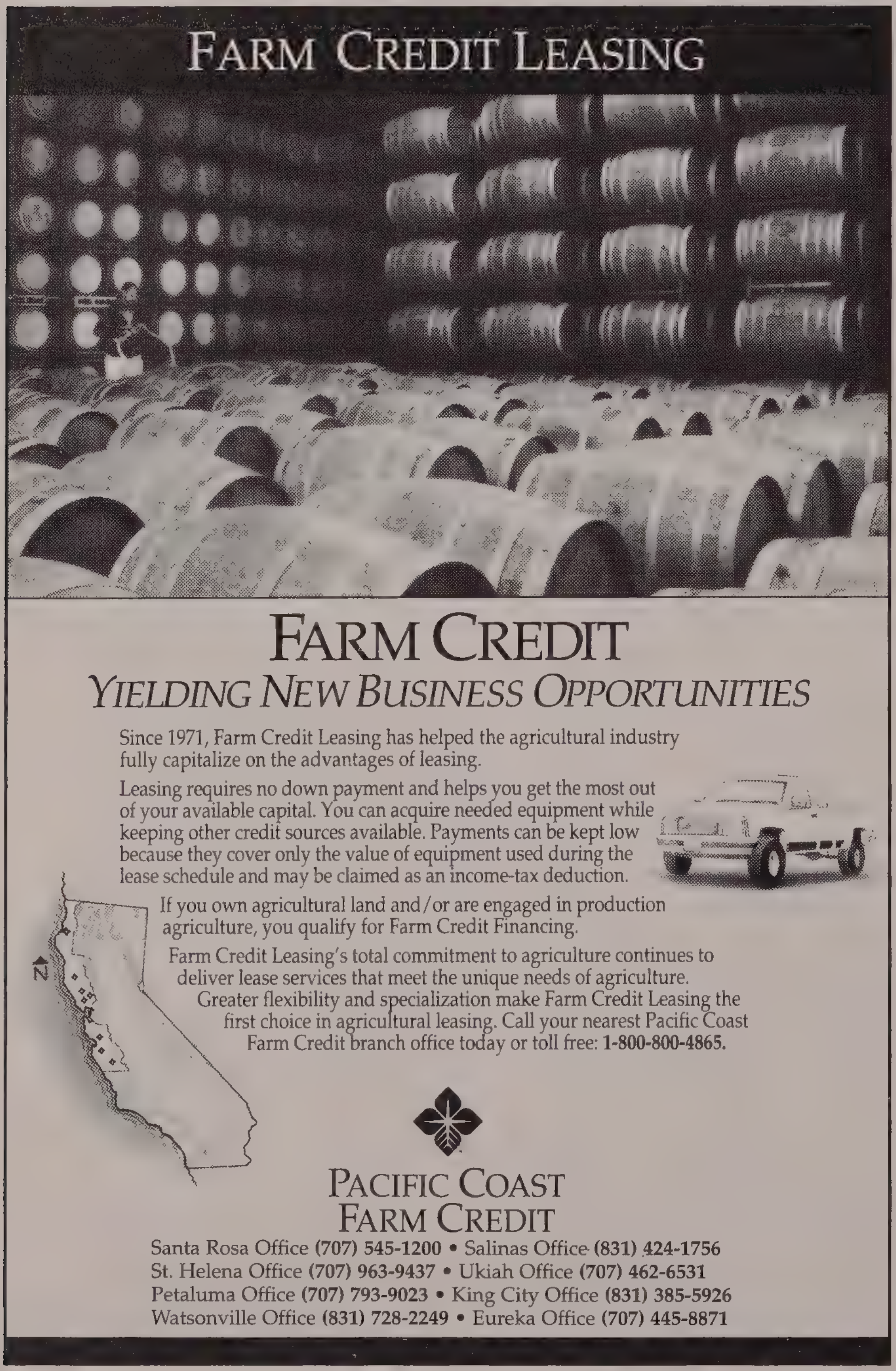
Pontallier discusses the importance of keeping yields low in a cool growing region like Bordeaux, "If climatic conditions are wonderful in Bordeaux, we can have higher yield and make great wine up to 60hl/ha. One of the greatest vintages we had in the last 20 years was 1982, a year of very high yields, close to 60hl/ha. But if climatic conditions are very difficult, the yield will have a much more important effect; if you have controlled the yield under 40hl/ha, you can make very decent wine. But if you overproduce, you have no chance to get grapes ripe."

"It would make no sense to keep yields as low as possible," explains Pontallier. "But in our conditions in Bordeaux, with our *terroir*, with our average climatic conditions, and with our viticultural practices, our experience shows that in most vintages, at yields between 40 to 55hl/ha (2.6 to 3.7 TPA), we produce the best wines."

In addition to climate, grape variety is another significant factor in determining crop levels. White grapes can support a larger crop better than reds, a fact that is written into Burgundy's Appellation Controlee laws. Chardonnay, in particular, can tolerate higher yields better than other white grapes because it is such a neutral aromatic variety easily influenced by winemaking. As Andy Bledsoe (Robert Mondavi, Oakville, CA) says, "Some producers use high-yielding clones, and pick late to maximize flavors, thus producing higher alcohol wines. Combined with *sur lie* ageing, new oak, and malolactic fermentation, these are 'in your face,' reserve-style Chardonnays that are getting high scores and that people love."

In addition to ripeness measured by Brix, pH, and acidity, for red varieties, ripeness of tannins — or physiological ripeness — is indispensable to quality. If a grower waits until tannins are ripe, sugars may be too high and acid too low, resulting in an alcoholic, over-extracted, pruny wine. This is a greater risk in warmer climates, such as California, as Ted Lemon, Littorai winemaker, notes, "Overcropping delays maturity. Adequate sugar levels may be produced but it may occur through dehydration, while maturity of other components — such as tannins and flavor and aroma compounds — will not fully develop."

The range of yields that will produce quality wine is lower in Burgundy than Bordeaux because fruit quality drops off most dramatically with increases in yield for Pinot Noir as compared to Cabernet Sauvignon. Josh Jensen (Calera Winery, Hollister, CA) says, "Especially with Pinot Noir, there is an inverse relationship between yield and quality. If a wine is harmed by filtration, Pinot Noir will be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affected the most; if a cellar technique causes a wine to oxidize, Pinot Noir will oxidize the fastest; if a wine suffers from overcropping, Pinot Noir will suffer the most. Intensity and concentration decrease as yields increase. As yield rises from one ton per acre to two, the wine quality won't dramatically change. But from two to three TPA, wines start to get noticeably lighter and thinner."

Low yields, when achieved through severe pruning and crop thinning, do not necessarily guarantee quality. Bruno Prats (recently retired from Chateau Cos D'Estournel, Saint Estephe) notes, "It is quite obvious that low yield is necessary to achieve the highest quality, provided that low yield is achieved through low vigor and not through green harvesting or diseases that destroy the crop. The problem is not to control the yield, but to manage the vigor of the vine. That is the major quality factor."

Site/terroir

As Prats suggests, the best wines are produced from vineyards that naturally control vine vigor and therefore yield, making the selection of the proper vineyard site critical. The French refer to site with a more all-encompassing term, *terroir,* the sum total of all physical factors affecting the vine: soil depth, composition, drainage, water holding capacity, slope, and exposition.

"The soil is the basis of the site, or *terroir,* as we say," adds Cazes. "Chateau Latour is the best vineyard in Bordeaux. Why is that? Just because of the location, that particular hill. The soil is heavy, and at the same time, very porous; the water doesn't stay in the soil, there are lots of pebbles, and it's a warmer microclimate than the others, resulting in better ripening."

Unlike France, which has a 200-year head start, California is still identifying the sites from which its greatest wines will come. "Only wines whose basic character is determined by the site, rather than winemaking, have the potential to be 'great wines' in the historical sense of that phrase," says Paul Draper (Ridge Vineyards, Santa Cruz Mountains, CA). "If a producer attempts to make great wine, site has overriding importance."

Yet in California, more is heard about the winemaker's than the vineyard's contribution to quality. Although this is changing, Draper explains why *terroir* is a more central concept in France: "The French depend on a single vineyard (*terroir*) to produce the highest quality wine. This is radically different from the typical New World definition in which quality is achieved through blending wines from different vineyards, where no one wine need stand alone or be of distinctive quality."

According to Pontallier, the importance of site can overshadow even that of old vines. The oldest vines, which he considers to be over 35 years old, do not necessarily produce the most concentrated and profound wines every year. "It depends more on the site than on all of the other factors. The best sites are those where the vines are never stressed — a well-drained site with

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good water reserves, where if it rains too much, the vines are not overwatered, or if there is a lack of water, roots can still find some water resources. Too much water creates excess vigor, and of course, that is not good for wine quality." A waterlogged soil limits aeration and therefore root growth, since roots need oxygen to grow.

Chris Howell (Cain Vineyard & Winery, St. Helena, CA) notes that it is important to understand a vineyard in terms of its site: "For a rich, fertile soil — defined by deep rooting depth (five feet), fairly well-drained, with good nutrients and availability to water — higher yields are expected and the potential for extremely high quality is just not there."

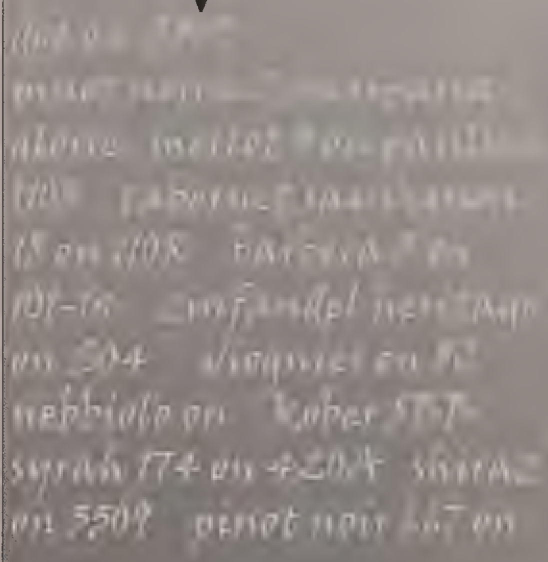
Bledsoe agrees, "It's quite obvious that, for a lower price point wine, you must have a higher yield, so you should plant in a site that is likely to give higher yields. In some growing areas, it is appropriate for the goal to be eight to 10 TPA because that is what is needed to produce an $8 bottle of wine and stay competitive. The problem in any discussion of yield and quality is that no one qualifies it by saying 'Our goal is to produce a $30 bottle of wine,' or 'Our goal is a $12 bottle of wine.'"

Francis Mahoney (Carneros Creek Winery, Napa, CA) explains how great Pinot Noir, unlike great Chardonnay, is entirely dependent on site, "If you've got a fertile site in the Carneros, plant Chardonnay where yield is not so crucial, and the winemaker is going to take over and do his magic through the use of yeast, oak, and other things to make it the way he wants. That is not to say that a low-yielding Chardonnay isn't spectacular, but generally speaking the public doesn't appreciate it as much.

"But when you plant Pinot Noir, on river bottom soil, it ends up with vegetative, tomato-leaf flavors, color suffers, and it's watered down with no texture. Even if crop is dropped through green harvesting, you will still not achieve what you want. When people say Pinot Noir is hard to grow, it's really not hard to grow, it's just more site specific."

Steve Hill from the Durell Ranch (Sonoma, CA) stresses the importance of vine balance, which means matching vine crop level to the productivity of the individual vineyard blocks. "We wish to raise the largest crop we can, but that must not affect quality negatively. So we generally let the site dictate what that crop load should be. Some sites due to warmth and/or deep fertile soil can obviously carry more fruit per vine than others. We don't believe it detracts from quality by allowing that.

The Durell Ranch sells grapes to many wineries, and Hill notes that quality means different things to different wineries. "All the wineries want quality, but while one may be happy with clean grapes without mildew, rot, or leaves, another may want the most intense flavors available from the grapes. That winery may also want us



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to arbitrarily limit the vine crop load at a level which may be far below what the site capacity could be. The winery wants to make absolutely sure that excessive crop load will not negatively affect quality. We may believe that the vines can carry more fruit, however if we believe the winery is paying us fairly, we will farm the grapes any way they want."

Lafon addresses the popular assumption that yields per hectare are lower on Grand Cru vineyards compared to Premier Cru vineyards. "That is not always true. A Grand Cru vineyard can produce as much as another vineyard, but it is managed for a smaller crop. Corton Charlemagne, Chevalier Montrachet, and Musigny are known for small production because of poor soil. But there is good soil in Richebourg, Montrachet, Batard Montrachet, and Chambertin, and I am sure that those Grand Crus could yield 50hl/ha every year. So then it's cultivation work to achieve a smaller crop."

In California, with replantings due to phylloxera, the challenge is matching site and grape variety. Justin Meyer (Silver Oak Wine Cellars, Oakville, CA) comments, "The first step is finding a good site and planting the correct variety. If you get that right, everything else falls in place. If you don't, all the other stuff — trellis systems, spacing — are just Band Aids to try and fix the fact that you didn't adapt the best variety to the right soil."

Meyer explains the difficulties of this process, "You can make some educated guesses — look at soil moisture capacity and fertility and rootstock — but it's still a crap shoot. But we should be smarter now, because we have the experience from the last planting boom which began in 1972. So we would be fools to go back and plant the same variety someplace where it didn't do well."

According to Draper, "It is only after a vineyard is mature (10 to12 years old) and the fruit, of itself, produces distinctive character and high quality, that the grower will know that the choice of site and varietal was correct." ■

Jordan Ross graduated from U.C. Davis with a degree in Enology. He works for Winebow in New York City, NY.

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Managing quality in a winery laboratory

by Gregory Edwards
The Yalumba Wine Company, Angaston, South Australia, Australia
E-mail: gedwards@yalumba.com

How can a laboratory convince its winery owner and other winery clients the results it provides are accurate and that all analyses are performed by trained personnel in a competent and consistent manner?

Can the same laboratory, when questioned about an analytical result, trace the data back to equipment calibration records and analytical standards and show the proficiency of the laboratory? If a laboratory complies with, or better still, is accredited to ISO/IEC Guide 25, it can demonstrate that its results are accurate, its personnel are competent, its equipment is properly calibrated, and that it maintains the highest standards of quality control.

The production laboratory at Yalumba Winery, Barossa Valley, South Australia, achieved ISO/IEC Guide 25 certification from the National Association of Testing Authorities, Australia (NATA), in the field of chemical testing in 1983. Today, Yalumba's laboratory staff applies the principles of ISO/IEC Guide 25 to all chemical functions of the laboratory, even to those tests for which it is not formally accredited.

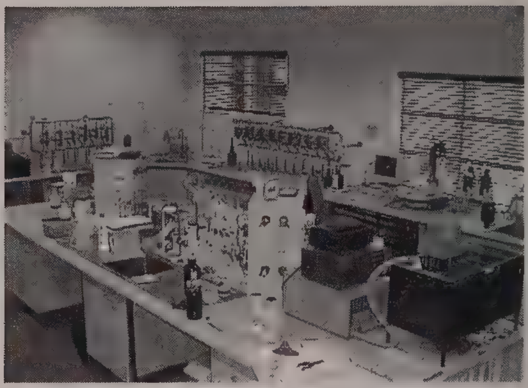
Yalumba's laboratories

Yalumba operates two laboratories, the production laboratory, which handles the chemistry and microbiological aspects of wine production, and the packaging laboratory, which supports the bottling process through goods inwards inspection and testing; specifications setting for corks, labels, cartons, and bottles; on-line and off-line inspection at production; and trials and development of packaging materials.

The production laboratory employs five technicians and three professionals — a senior chemist, chemist, and microbiologist. The packaging laboratory is staffed by one team leader and two technicians. In 1998, the production laboratory moved into new premises, which updated some necessary laboratory equipment, such as fume hoods, gave relief from over-crowding, and provided a more controlled environment (in terms of temperature) than had been achievable in the old premises.

The production laboratory is structured as a self-directed work team, and the quality of results produced are the responsibility of the team and not of a supervisor. The team was established to provide individuals with greater influence on their working lives. Rosters, holidays, staffing levels, new equipment purchasing, and many other factors are all managed by the team.

Though it is not a public testing service, the production laboratory provides VI1 certificates for organizations that contract for bottling services or that use Yalumba's export division (Negociants International). Yalumba is accredited for most of the common wine analyses, and the production laboratory reports approximately 93,000 tests per year.



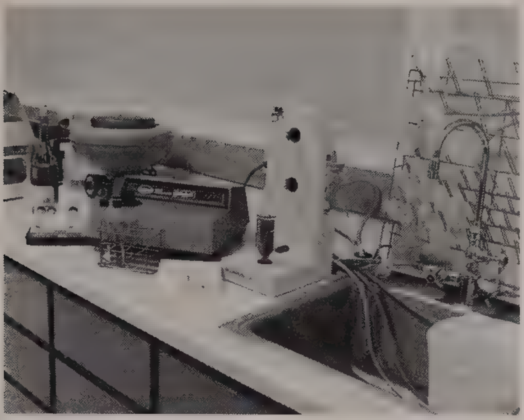
Routine chemistry section of Yalumba laboratory. (l to r) alcohol distillation and SO_2 setups and pH/TA autotitrator.

Chemistry laboratory looking towards microbiology laboratory.

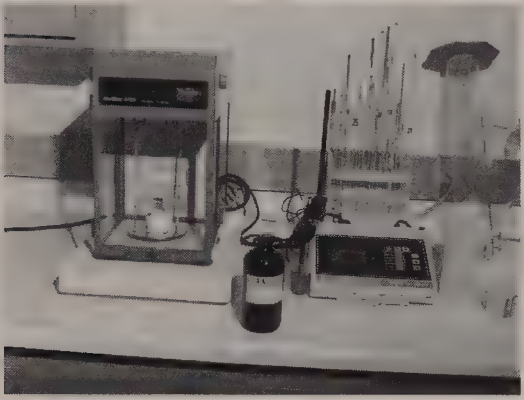
NATA – Australia's accrediting authority

NATA is Australia's only nationally and internationally recognized provider of laboratory accreditation. A private company established more than 50 years ago, it currently has approximately 2,500 accredited members. It accredits laboratories against the ISO/IEC Guide 25 for testing, measurement, and calibration activities.

NATA's competence is regularly evaluated by bodies in Europe (EA – European Accreditation) and the Asia-Pacific region (APLAC – Asia Pacific Laboratory Accreditation Co-operation) to ensure its operations are consistent with international practices and ISO/IEC Guide 58 (Calibration and testing laboratories accreditation systems – general requirements for operation and recognition). EA and APLAC are recog-



Turbidimeter and ebulliometer at Vinquiry, Windsor, CA



Balance and pH meter at Vinquiry.

Spectrophotometer at Geyser Peak Winery, Geyserville, CA.

Proper and frequent calibration of laboratory equipment, such as the examples shown above in California laboratories, is a crucial factor in establishing laboratory credibility.

nized by the International Laboratory Accreditation Co-operation (ILAC). NATA accreditation is recognized internationally, allowing activities of laboratories accredited by NATA to be recognized world-wide.

Any laboratory undertaking testing, measuring, or calibration activities can be accredited by NATA. Laboratories can have all or part of their activities accredited. The accreditation process involves a thorough audit of those components of a laboratory that contribute to the accuracy and reliability of any test data produced. This audit investigates such components as staffing, training, supervision, quality control of equipment, maintenance and calibration, recording and reporting of test results, and also the environment in which these tests are undertaken.

This audit is typically undertaken by a NATA staff member in conjunction with an external auditor. The external auditor does not have to be from the wine industry but must have relevant technical experience. Yalumba's preference has been to use someone who does not have wine industry experience, to protect privacy and so that the audits are informative.

The NATA board reviews the audit before making final recommendations to the audited laboratory. Communication continues with NATA after the audit until all non-conformances are corrected. These audits are repeated every two years, but they can also be undertaken if there are substantial staff changes, if resources or procedures are changed, or when a laboratory is seeking to change the scope of its registration. Being accredited by NATA allows Yalumba to use the organization's symbol of laboratory accreditation – hence Yalumba's production laboratory is instantly recognized as being able to produce reliable and accurate test results.

Benefits of NATA ISO/IEC Guide 25 accreditation

NATA is the interpreter

Quality systems, at their best, can often be complicated documents. NATA makes the system of accreditation easier by helping to interpret and amplify the requirements of Guide 25, providing (for a fee) a booklet, which simplifies the jargon, to all applicants for accreditation. This is especially helpful in such areas as record keeping.

Guide 25 in section 12.1 states that an accredited laboratory "shall retain on record all original observations, calculations and derived data, calibration records, and a copy of the calibration certificate, test certificate, or test report for an appropriate period." NATA, in section 3.09.1 of its "General Requirements for Registration – 1992," states "The records system shall allow retrieval, **for at least three years**, of all original test data within the terms of registration."

Plainly, the NATA guideline lays down the boundaries within which the accredited laboratory must operate — this not only saves the laboratory interpreting the standard but also provides confidence that the boundaries are reasonable. NATA has also provided guidelines for the frequency of calibration of testing equipment and analytical instruments.

The ISO/IEC Guide 25 states in section 8.2: "All equipment shall be properly maintained," and in section 9.2: "The overall program of calibration and/or verification and validation of equipment shall be designed and operated so as to ensure that, wherever applicable, measurements made by the laboratory are traceable to national standards of measurement where available." These points simply state that maintenance and calibration must be done, but they do not help the laboratory make decisions about appropriate frequencies.

NATA states that balances and scales must be recalibrated every three years (by a NATA registered calibration authority or in-house using calibrated masses), serviced every year, repeatability checked every six months, balance capacity checked every month, and zero-checked before each weighing. To further assist in this process, NATA has produced Technical Notes, which provide enough detail to competently undertake the required actions.

The guide is common sense

ISO/IEC Guide 25 describes the parameters that need to be in place to have a workable quality system. It clearly describes how a laboratory should be organized (section 4.2). That is, the laboratory shall have:

- managerial staff
- supervisors who are qualified in the tasks performed
- a technical/quality manager
- a deputy to fill in when the technical/quality manager is not available, and
- documented policies and procedures.

It shall also participate in proficiency programs. These factors, which many non-accredited laboratories already subscribe to, simply describe a well-organized laboratory.

It also describes what a quality manual shall contain (section 5.2), such as:

- a quality policy statement

June 1, 1999 Bird Damage Control Bulletin

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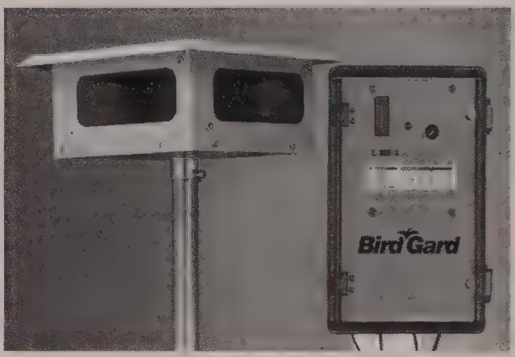

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- an organizational and management structure
- job descriptions
- identification of approved signatories
- scope of calibrations and tests
- reference to calibration procedures
- reference to proficiency programs it participates in.

The guide also specifies that the laboratory shall have sufficient personnel with the necessary education, training, technical knowledge, and experience to perform the assigned functions, as well as appropriate facilities in which to perform the calibrations or tests (Section 6 and 7).

Even if a laboratory was established and not accredited to a quality system, it would logically subscribe to many of these documented ideals. It therefore makes sense for all laboratories to use Guide 25 to assist in this process.

The quality system is the regime under which laboratories typically work

The basic function of a wine laboratory is to analyze the wine at various process stages so as to assist winemakers in making appropriate decisions about the status of their wine. Delving deeply enough into any wine laboratory will lead one to the procedures the lab follows. These may be photocopies from journals or even copies of *Amerine and Ough,*[1] but every lab will have procedures.

ISO/IEC Guide 25 requires that procedures appropriate to the work undertaken must be in possession of the laboratory, and that these procedures are validated for use in the workplace. It also goes a step further requiring documentation of operational procedures for handling equipment, preparation of test items, and for calibration and/or testing. It is logical to document these items as they may influence the ultimate quality of the laboratory's outputs.

Having documented procedures makes the task of providing adequate training for personnel and having appropriately trained personnel much easier. If all personnel are being trained in all facets of the laboratory's operations in the same manner, then theoretically, the laboratory's outputs should be consistent, regardless of which analyst performed the test. These outputs are tested through participation in proficiency testing, which provides laboratories with further indicators of the confidence they can place in their results. Any deficiencies are noted through Corrective Action Requests (CARs). CARs provide a mechanism by which a laboratory can audit its methods and improve its processes. This is simply a good quality control process.

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[1] Amerine, M.A and Ough, C.S (1980). *Methods for Analysis of Musts and Wines.* John Wiley & Sons, U.S.A.

For these reasons, Yalumba's laboratory applies the principles of the NATA ISO/IEC Guide 25 accreditation to all of its testing activities, even to tests for which it is not accredited. Guide 25 provides the mechanisms by which laboratory staff can regularly monitor and audit procedures and establish confidence in their results.

This is especially important when you consider that wine is not always a homogenous mixture, especially after making tank additions. The laboratory relies on the cellar to make the appropriate additions and sample the results of its work. When anomalous results are found, participation in various levels of proficiency testing and equipment verification supports laboratory staff's results and therefore verifies the necessity of rechecks. It is a bit of a "Them and Us" syndrome, but proficiency testing does allow the laboratory to eliminate false or poor analytical results and highlight areas where problems, such as poor sampling, may exist.

Proficiency testing

Proficiency is an important and vital part of Yalumba's laboratory quality system. Without it, the laboratory cannot demonstrate any degree of confidence in its results.

The laboratory participates in three levels of proficiency testing. NATA runs a wine proficiency program, which provides a set of samples every six to 12 months. This program does not look at complete wine analysis, but requires the analysis of a couple of key components each time. Previous tests have required analysis for SO_2, reducing sugar, malvidin diglucoside, total acidity, volatile acidity, alcohol, and specific gravity.

Yalumba has also participated in some of the NATA non-wine proficiency programs, such as the analysis of liquid nutritional supplements for potassium, sodium, calcium, and iron. A major benefit of the NATA proficiency programs is that the laboratory tests itself against laboratories of similar accreditation, that is, laboratories with an accredited quality system that use validated methods and properly trained and competent staff.

Yalumba also participates in the Interwinery Analysis Group (IWAG) proficiency program. This is an Australian proficiency program, which requires the analysis of approximately eight sets of samples per year. Participating laboratories are required to undertake the full gamut of their testing regimes on these bottles of wine. IWAG is starting to spread its wings internationally, with participating wineries from New Zealand, South Africa, the U.S, and elsewhere.

The major advantages of the IWAG proficiency program are the frequency and number of analyses performed, enabling participating laboratories to gain an appreciation for variability in all of their major wine analyses. One of the major disadvantages is that not all laboratories subscribe to a quality system, and hence mechanisms for verifying the suitability of their equipment or reagents for the testing regimes may not be in place. This can skew the results and lead a lab supervisor into a false sense of security or deep depression.

The final level of proficiency testing that Yalumba subscribes to is its own internal proficiency program. The laboratory may use a pair of fortified wines, of the same or slightly differing composition, or a pair of white wines, of the same or differing composition. The wine pairs are packed in the same type of bottle, so they cannot be identified as being different. Many dozens of these wines have been put aside, so the proficiency program will have longevity and consistency.

Each technician is required to analyze the wines and present his or her results for interpretation. A major advantage of this proficiency testing regime, above the NATA and the IWAG regimes, is that every analyst has an opportunity to ana-

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lyze the wine, whereas the other programs typically only provide enough sample for a single analysis. The laboratory collates the results for each test and analyzes the within-analyst and between-analyst variations. This identifies analysts who may be having difficulties with particular analyses, thereby providing a mechanism to signal the need to retrain personnel.

Yalumba also compares its results to those of another NATA-registered laboratory, enabling Yalumba to compare the mean and standard deviation of the differences between its results and the expected "target" results of the other laboratory to see if its variation is consistent and, if not, why not.

These proficiency testing regimes provide a mechanism by which the production laboratory at Yalumba can continually audit its performance, and therefore take action when non-conformances arise. This is especially important when other work demands make it hard to formally audit the quality system.

Negatives of ISO/IEC Guide 25 accreditation

Chemistry and metrology collide

Many aspects of the chemistry laboratory are becoming more metrology-based in principle, because of the use of dispensers, micro-volume pipettes, balances, and gauges.

Keeping up the calibration on these apparatus is demanding of time and resources, and it also requires lab staff to become familiar with the jargon of metrology. This occurs whenever staff has to decipher a calibration report for a balance, for example, or to verify the accuracy of a pipettor. Many equipment manufacturers publish some excellent resources which can help in understanding this jargon.

Interpretation of the guide

While NATA interpretation of ISO/IEC Guide 25 clarifies and simplifies some of the concepts, there is also a down side. The interpretation of the standard, in particular, the components relating to the quality manual, are forever changing as NATA's understanding of the requirements increases. It is appropriate that the interpretation of the standard improves, but there are associated costs in maintaining and updating the quality manual.

Preservation of original records in an electronic environment

In the traditional paperwork society, data and who created that data were relatively simple to trace through the use of signatures, colored pens, and recognition of handwriting.

In the electronic environment, it can be difficult to maintain this traceability. Many programs allow an individual to "log on" to the software, which puts an identifying code against the data recorded. But if a different user comes along and uses that equipment, he or she has to "log off" and "log on" again for the system to recognize the presence of a new user.

Though some of the laboratory infor-

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YALUMBA WINERY

The Yalumba Wine Company, located at Angaston in the Barossa Valley, South Australia, was founded in 1849 by Samuel Smith, a brewer from Dorset. The 150-year-old winery is currently owned by brothers Robert and Sam Hill-Smith, who are fourth generation descendants of Samuel. This makes Yalumba Australia's oldest family-owned winery.

Yalumba is a grapegrower, winemaker, and wine marketer, with vineyards in key viticultural sites in Australia, New Zealand, and the U.S. While Yalumba is small in comparison to the larger wine producers in Australia, it is quite centralized and focused, with all of its Australian winemaking and bottling activities being handled from one site in Angaston. Yalumba produces such brands as Oxford Landing, Heggies, Pewsey Vale, Jansz of Tasmania, and Menzies, and the international brands of Voss (U.S.) and Nautilus (New Zealand).

As a wine marketer, Yalumba distributes its own wines, as well as those of other winemaking companies. It imports and exports wines through Negociants International. ■

mation management systems (LIMS) may have solutions to these problems, rather than installing a LIMS, Yalumba uses a relational database (File Maker Pro) to create its own recordkeeping system. As the masters of their own system, laboratory staff can make modifications as necessary, without the need to conform to purchased software and its limitations.

The database provides a mechanism by which they can quickly find records and results without having to sort through reams of paper. However, because they are limited by the functions of the database, some of the niceties may not be available.

Operational links between ISO/IEC Guide 25 and ISO 9000 series of standards

Yalumba strives to keep the quality manual for the laboratory and the quality manual for the ISO 9000 system separate. This avoids complicating the details of the ISO 9000 compliance audit (since ISO 9000 is not concerned with the technical competence requirements of Guide 25), and it makes the ISO/IEC Guide 25 compliance audit simpler, as all of the details of the laboratory are in one quality manual, rather than having to sift laboratory-related details from many other details.

This leads to some duplication of resources, but it does allow for easier management of the laboratory quality system, as the laboratory quality manual always reflects the current status of the NATA audits. There are associated costs in managing two quality systems, in that the quality management process is decentralized, and the management system is not uniform throughout the company.

Anonymity in sample and proficiency testing

A downside to proficiency testing is that proficiency samples, however hard one tries, are never anonymous. Staff realize when a sample is related to proficiency testing, and subconsciously they will be more particular about the quality of their work. This is also true for any analysis which requires an analysis certificate or is contracted to the laboratory.

The opposite can also be true. Staff will often formulate opinions about the importance of various samples or about the person presenting samples for analysis. The quality of results obtained may be influenced by these opinions.

Corrective Action Requests

Under the ISO 9000 quality system, CARs are generated against the system as a result of non-conformances identified during audits or due to customer complaints. The CARs system becomes slightly more controversial when using ISO/IEC Guide 25.

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customer complaints, as in the ISO 9000 quality system, but they can also be generated by analytical results. The latter is controversial as it can point the finger at individual analysts, especially if CARs are raised against proficiency testing (internal) or against a particular analysis.

These CARs require sensitivity in their handling and often much encouragement is required to make the corrective action take place. Staff feel that these intrusions challenge their intellectual ownership of the analytical procedures. Laboratory analysis is demanding work, as there are not many careers which require demonstration of proficiency in such a forthright manner.

Conclusion

The ISO/IEC Guide 25 quality system is beneficial for laboratories to implement as it helps to improve control over equipment calibration and verification. The requirement to be involved in proficiency testing provides excellent opportunities to test a laboratory's competence against peer laboratories.

Corrective actions generated by the system help in problem-solving procedures and the quality system, as well as providing a mechanism by which to undertake internal audits of procedures. All of these factors help to support and build confidence in the reliability and accuracy of results. If the laboratory does not have confidence in its results, it cannot adequately operate.

The ISO/IEC Guide 25 is not inexpensive to operate and maintain as it requires personnel with appropriate skills and training to adequately perform the various tasks (however these are required to run any successful lab). It also requires a certain amount of time, depending on the size and equipment status of the laboratory, to maintain both the equipment and the quality system. For example, Yalumba estimates that its laboratory staff spends approximately 10% of their time maintaining the quality system. This is a necessary, yet minimal, expenditure that makes it possible for the lab to prove its competence and proficiency and provide reliable results for customers. ■

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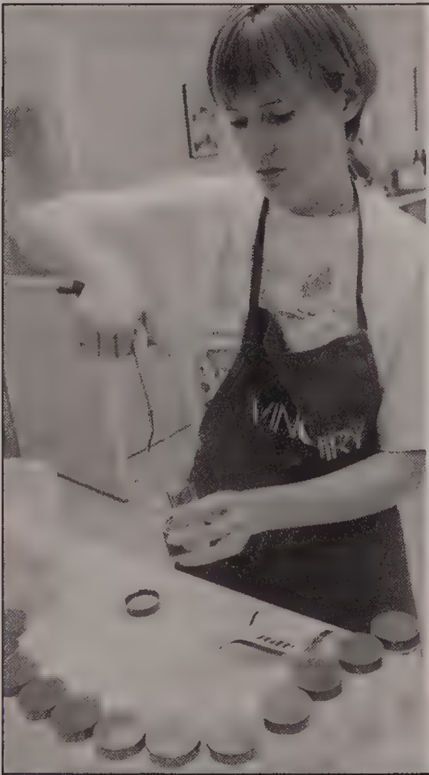

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DEALING WITH SILT

in a micro-irrigation system

**by Lizanne E. Wheeler, M.Sc. &
Patrick D. Brown, CID
Vineyard Water Systems**

"How do you deal with silt in a drip system?" is a frequent query that we receive from colleagues and clients. Since it's a common problem, just how do we "deal with silt"?

Silt, by definition, has a soil particle size falling between clay and sand. The U.S. Department of Agriculture classifies silt as having a particle size between 0.002 and 0.05 mm. We generally think of silt as being of natural origin, but frequently irrigation systems are loaded with "self-inflicted silt," whose origins are fertilizer insoluble fractions, solution grade gypsum, and mineral precipitates.

Like sand, naturally occurring silt is typically composed of irregularly shape and sized particles, predominately of quartz. Because of its small size, silt is able to sustain an adhering film of clay to its surface, giving it many clay-like attributes, including plasticity, stickiness, and adsorption.

The finest filter used in agriculture is typically 200-mesh equivalent, which will capture particles as small as 0.08 mm. So silt, which is smaller than 0.05 mm, should easily pass through agriculture filters as well as drip emitters or micro-sprinklers. If this is the case, why do we have to deal with silt at all?

When the irrigation source water contains heavy loads of suspended particles, the first challenge is filtration. Sand and larger silt particles can be effectively removed with hydrocyclonic sand separators, which spin the water and remove the heavier particles through centrifugal and gravitational forces. Larger, less dense particles can be removed by a variety of filtration methods including screens, disks, and sand media filters. That leaves the finer silt and clay particles, which theoretically should pass through the filter, but they don't.

Unfortunately, due to its sticky nature, silt can aggregate and become an irrigation challenge, forcing us to "deal with silt" after all. Silt commonly builds up on the surface of a filter and "blinds it," reducing the flow to nearly zero. Silt that does pass through filters can settle out in pipelines and hose laterals where the water velocity is slow enough to allow for its deposition. Silt has also been shown to build up on screen-filters and extrude through the mesh like toothpaste, creating emitter-plugging size particles downstream of the filters.

Media filter plugging

Depending on its nature and the type of filter, silt may or may not pass through the filter. For example, the silt may be sticky enough to adhere to the media sand and begin to accumulate. Over a period of time, the silt can form a thin layer or cap across the top of the media bed, greatly restricting the flow through the filter. If the silt is sticky enough, it may be very difficult to rinse out of the media bed during a normal backflush sequence. This can be remedied by maintaining a fine-grade media like #20 crushed silica in the tank and increasing the backflush frequency and flow rate to discharge the contaminated top layer of media sand on a regular basis.

The resulting accelerated loss of media sand requires careful monitoring, and topping off sand levels becomes a frequent necessity, typically on a monthly basis. If the silt is being successfully captured on the surface of the media, the duration (actual flushing time per tank) can be shortened to reduce the amount of media discharged during each sequence.

A second media filter challenge occurs when silt passes through the media bed and accumulates around the filter's underdrain, which is quite common with epoxy-cake underdrains. This occurs gradually and without a noticeable increase in the pressure differential across the filters. It can only be detected by digging through the media bed with your hand to inspect the cleanliness of the sand as you pass deeper into the tank. All of the sand below the top few inches should be clean. If you find silt, mud, or clay deep in the media bed, you will soon be forced to "deal with silt."

In the first example, silt was captured on the surface of the media, requiring frequent, quick, high-velocity backflushes to toss out the media sand that had become contaminated with the sticky silt. In the case of silt penetrating deep into the media bed, less vigorous but longer duration backflushing is required to lift the silt out of the media matrix and discharge it without a significant loss of filtration sand. Once the filters have been thoroughly rinsed of silt, the backflushing sequences should be performed on an appropriate time-clock basis, not on a pressure-differential basis. The media sand must be inspected regularly (monthly) to insure that the backflushes are adequate to maintain clean media beds.

It may be that the silt is of such a size that it is captured in the media, though it would be small enough to pass through emitters or micro-jet or pulsating (frost control) sprinklers. An example of this would be plugging a fine grade media sand such as #20 crushed silica, (~200-mesh equivalent) with silt in the range of 180 mesh, when the emitters or micro-sprinklers require only 120-mesh filtration. Replacing the media with a courser grade (#16 crushed silica, ~160-mesh equivalent) may allow the silt to pass through the filters and emitters without any plugging.

Screen filter plugging

Screen filter plugging with silt is generally a result of sticky silt particles adhering to the mesh fabric or a trapped particle (sand) and accumulating to such a level that they bridge across the screen's openings. As in the case of media filters, it may be that the problem silt is of a small enough size that it would easily pass through the emission devices without plugging them. If this is determined to be the case, changing the mesh size to a coarser-grade filtration may solve the problem.

Another potential screen plugging solution is to increase the velocity of the water across the screen's face. If the velocity is high enough, the energy of the water "pushing" the silt overcomes the ability of the silt particles to stick to one another and bridge across the screen's openings. There are several agricultural screens designed to take advantage of this principle. The most common utilizes "spin-plate" nozzles that force the water into a centrifugal spinning action across the face of the screen. It is possible to place rubber stoppers in one or more of the nozzles to increase the velocity of the water across the screen, depending on the situation. Another design uses a "torpedo" on the inside of a tubular screen to decrease the filter's volume without decreasing the surface area of the screen, resulting in a dramatic increase in the velocity of the water past the face of the screen.

Because silt accumulation on a mesh screen gradually creates a finer mesh size until bridging and blinding occurs, the phenomenon of screen plugging appears to be exponential in that very little pressure-differential is observed until the blinding occurs. Because of this, the backflush cycles should be scheduled regularly, rather than triggered by a pressure-differential, to prevent reaching the "critical mass" of accumulated silt which is capable of blinding the screen.

Silt downstream of the filters

It is also quite common to find silt accumulated in the mainlines or hose laterals of a micro-irrigation system. This occurs when silt that has passed through the filter (or has been injected below the filter!) and reaches an area of the irrigation system where the velocity of the water is low enough to allow the particles to settle out. Similar to "silting out" in a river delta, in this phenomenon, particles aggregate to form layers or lenses of sticky mud. Because of the adsorptive properties of the clay fraction, these silt layers contain the minerals and nutrients necessary for biological growth. Therefore they serve as a food source as well as a suitable place of attachment, for the bacteria and algae that comprise the first link in the food chain of the ecosystem that can potentially develop in any micro-irrigation system.

It is important to frequently flush this silt from the buried lines and hose laterals to keep the biology of the drip system under control. A good flush requires increasing the water velocity in the lines to at least two feet per second. It is important to keep in mind that as the silt layers age and go through several wet/dry cycles they harden and become more difficult to remove. In some cases, they will actually become cemented together in a limestone matrix, (dis-

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To effectively flush buried mainlines, it is necessary to open the flush valves at the ends of the lines and allow the water to run for several minutes. Depending upon the system design and pumping capacity, it may require closing off a portion of the field to generate enough velocity in the mainline to scour the silt out. Some systems must be retrofitted with flush valves of appropriate size to allow for sufficient flow.

In a similar fashion, frequent flushing of the polyethylene hose laterals will minimize the biological contamination associated with silt accumulation. To achieve an adequate flush velocity of two feet per second through the end of a typical hose lateral (0.620 inch inside diameter) requires a flow of approximately two gallons per minute flushing out the end. This increased flow rate causes a much greater pressure loss down the hose length, requiring greater than normal hose inlet pressures to sustain the flow. It is usually necessary to increase the field pressure and only flush a small percentage of the hose laterals at a time. The field pressure can be increased by adjusting the pressure-reducing pilot on the block valve or by closing a portion of the blocks normally irrigated with the set.

Summary

Here are the ways to deal with silt:

- Minimize the entry of silt into the system with appropriate pump intake suction designs (do not pull water off the bottom of a reservoir).
- Use a hydrocyclone pre-filter if the sediment load is heavy (above 2 parts per million).
- Adjust the duration and frequency of the filter backflushing sequences to an appropriate level (as described earlier in this article).
- When using sand media filters, frequently inspect the media bed down to the underdrains for evidence of silt accumulation.
- Frequently flush all buried pipelines to prevent the accumulated silt from hardening.
- Insure that the time-consuming hose-end flushes are effective by increasing field pressure and only flushing a few laterals at a time.
- Silty systems generally require more frequent sanitizing. Monitor the biological growth in the system by capturing hose-end flush water into a clear jar and holding it up to the light. Adjust the chlorine program accordingly. ■

Lizanne E. Wheeler and Patrick D. Brown are independent irrigation design consultants, specializing in bilingual training and developing management programs for micro irrigation systems. They may be contacted at Vineyard Water Systems, 521 Lucerne Road, Cayucos, CA 93430, tel; 805/995-0587. Reprints of their recent publications are available at www.vineyardwater.com.

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Joyous self-expression

by Millie Howie

Oodles' owner Elka Gilmore reveals her sense of fun with colorful tableware and whimsical mermaids. Photo by Fred Lyon.

"Pairing wine with Asian food is tricky, but not impossible," explains Elka Gilmore, owner and executive chef of Oodles (San Francisco, CA). "Wines that are high in acid and often low in alcohol are an ideal match for Asian cuisine. For white wines, these tend to be the classic grape varieties from Alsace, Germany, and Austria: Riesling, Gewurztraminer, Pinot Blanc, and Gruner Veltliner, for example. These wines have a crisp, clean finish. I also believe Sauvignon Blanc is a great, food-friendly wine, so at Oodles we make it a point to offer some from California, South Africa, and, of course, France's Sancerre.

"The truth is, I have been curious about the flavors of Asia all my life," admits Elka. "I was first able to explore them in depth in 1982 when I opened Camelions in Los Angeles. The sous chef and I got into the habit of going to a Japanese bar every night, and eventually tasted our way through the complete menu. Finally, I hired the chef to work for me during the day; that was how I really got an education about Asian ingredients."

This introduction, followed by invitations to cook in Thailand, Japan, and Singapore, led to the 1995 opportunity for Gilmore to launch Kokachin, a fine-dining, French-Asian restaurant in Manhattan's Omni Berkshire Palace Hotel. Three years later, she returned to San Francisco, opened Oodles, and realized her dream of owning her own restaurant, celebrating the cuisine that she had spent a lifetime exploring and cultivating.

Gilmore worked with wine authority Vivien Gay to assemble the wine list. Combining Gay's expertise with wine and Gilmore's food palate, they chose only wines they liked and that they, personally, felt worked well with the restaurant's food offerings. As a result of their collaboration, the list contains many little-known and hard-to-find wines, including some rare wines from Switzerland made from lesser-known grape varieties, such as the fragrant and fruity Dezaley L'Arbalete and Petite Arvine.

Wines on the list are arranged by flavor from less intense to more intense, ignoring varietal categories. Only the tasting menu and dessert list carry suggestions of appropriate wines.

Because Gilmore admits a love of rosé wines, the list features three sparkling rosés, a classic Chateau Routas Rouviere from Provence, a Rosé de Burgundy from Chateau de Marsannay, and a Rosé of Virginia from the Barossa Valley (Australia). She describes the red wine offerings as "dynamically eclectic." "With duck, quail, chicken, lamb, pork, and beef on the menu," she explains, "we needed to assemble a spectrum of versatile and accessible reds that would harmonize with the food. There's a democratic mix of California, Oregon, Chilean, Australian, Italian, and French wines." Pinot Noir is one of the best selling red wines on the list which includes only a single California Chardonnay and one California Cabernet Sauvignon.

"My approach to the wine list," Gilmore emphasizes, "is the same as my approach to the menu. I want my customers to experience something truly eye-opening and to start to think about flavors in a fresh, exciting way, particularly as they savor new food and wines together."

To introduce diners to this gustatory epiphany, Gilmore has put in place an eight-course tasting menu, with courses generally selected from the regular dinner menu. Without the beverage selec-

Rutherford Vintners
Baron Herzog Zinfandel
1996 Lodi Zinfandel
Fenestra 1996 Lodi Zinfandel
Clayton 1996 Lodi California Zinfandel
Ravens Wood Zinfandel Lodi 1997 Vinted and bottled by Ravenswood Sonoma California
Vigil 1996 Zinfandel Lodi Old Vines California
Peirano Estate Vineyards Old Vine Zinfandel Lodi
Spenker Lodi Zinfandel 1996 Estate Bottled
Estate Grown Lucas 1995 Lodi Appellation Zinfandel
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tions, the average prix fixe is $45; with beverages, it averages $66. The menu changes according to Gilmore's whim, she says. "On the average, it changes every three days, since the choices are guided by what foods I find in the marketplace."

Not all of the beverages are wines, since Gilmore thrives on initiating restaurant patrons into exciting new experiences. Thus, when Oodles was invited to be the first San Francisco restaurant to serve Kirin Ichiban beer on draft, she jumped at the chance. She also serves unique coffee blends and unusual Silk Road teas.

The wine list features more than 50 choices, with 12 to 15 wines offered by the glass. The by-the-glass list changes frequently, since it is keyed to the tasting menu. The mix is 60% white, 40% red. If a guest shows a strong desire to try something that's not on the by-the-glass list, Gilmore will open it, and continue pouring until the bottle is exhausted. By-the-glass prices range from $4.50 to $8 for a 5-oz. pour. The tasting menu pour is 2.5-oz.

Oodles has a capacity to store up to 90 cases of wine. Wine purchases range from a few bottles to three cases.

"Anyone who looks at Oodles' wine list will notice that the prices are dramatically low compared to most restaurants," comments Gay. "We take the wholesale price and double it, so Oodles' customers can enjoy a quality bottle of wine for as low as $12. This is a deliberate move on our part to encourage people to be adventurous with both the food and wine and to make their visit to Oodles an act of discovery. Our goal is to provide suitable wine in four tiers of pricing: under $15 per bottle, between $15 and $20, $20 to $30, and over $30 per bottle."

Oodles' wine list changes frequently, because Gilmore and Gay actively seek out wines that fall into the limited-production, "unusual" category. They feel the frequent changes make the list more interesting and vital and give them a greater opportunity to broaden the customer's understanding and appreciation of the food, the wine, and the combined flavors of both.

Intensive staff training sessions were conducted by Gilmore, Gay, and wine suppliers before Oodles opened in 1998, and new wines are never introduced without a staff tasting. Gilmore feels this familiarization is imperative since diners are guided by staff suggestions.

"I cook exactly what I like in the restaurant," states Gilmore, "but my goal is to create dishes that are achingly good. I want to create combinations that surprise, tantalize, and delight. I want the customers to think about that dish, and those wines, for a day, a month, or even a year after they have dined at Oodles."

A large part of that desire is realized through Gilmore's interest in *umami*, the Japanese concept described as a fifth taste and loosely translated as *savory*. "The concept affects everything I'm doing at Oodles: how ingredients are best combined to produce optimal flavors; which foods go best with which wines and generally how food is experienced at a higher level," says Gilmore. "The sequence of courses preceding and following a specific dish impact umami greatly," she explains.

"That's why my eight-course tasting menu is the ultimate expression of my embracing of this most ethereal subject. The tasting menu gives me a chance to present dishes that resonate with umami flavor on their own, harmonize with the beverages that are carefully paired with each dish, and collectively produce an effect that I hope, leaves the diner acutely attentive to a changed and charged sense of satiation, serenity and well-being."

Part of the experience is, Gilmore feels, influenced by the ambiance, so at Oodles she mixes sprouting bamboo and orchid blossoms with brilliant notes of color, titillating touches of whimsy, and flashes of the unexpected. The wine glasses, made by Villeroy & Boch, have neon orange, green, or blue stems, with tiny plastic mermaids hanging from the rims. The waitstaff is dressed in brilliant yellow and orange tunics, and the menus are printed on transparent vellum over lime-green sheets. "Since it's my restaurant, I wanted it to be me," she says, "and I think of myself as a humorous being, with a sense of fun. Adding unexpected touches to the decor and presentations was a hoot!"

Also in the spirit of fun, linked to her desire to educate, Gilmore is planning a food and wine club keyed to various topics; with each evening devoted to a single varietal or emphasizing specific food ingredients. "We have a great group of diners who have been steady customers since we opened, so the idea of a club is a way to do something to let them know we appreciate their loyalty." ■

Oodles, at 900 Bush St., San Francisco, CA, is open only for dinner. Seating capacity is 142. There is a full bar and a private dining room occupies the mezzanine level. Dining hours are 5:30 - 10:00 p.m., Monday through Thursday; 5:30 - 10:30 p.m., Friday and Saturday; closed Sunday.

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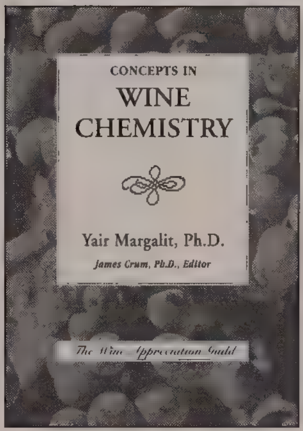

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SELLING WINE IN WINERY RESTAURANTS

by Millie Howie

Creation of the wine list gets special consideration when a winery owns a full-service, white-tablecloth restaurant sited on the winery grounds. In most winery restaurants across the U.S., only wines produced by the winery are served. A few winery restaurants offer wines produced by their neighbors within the same general growing area, and three — the Restaurant at Domaine Chandon (Yountville, CA), Wente Winery (Livermore, CA), and Cafe Champagne at Thornton Winery (Temecula, CA) — feature a broad spectrum of wines from many California areas.

Domaine Chandon

Choices on Domaine Chandon's list includes about 250 wines from as far north as Mendocino County, and as far south as Santa Barbara County. "Our list," says Jim Connell, director of hospitality, "is a combination of wines from small properties, that in many instances are unavailable outside Napa Valley, and premium wines from larger wineries that tend to drive the entire industry."

According to Connell, each wine on the list, regardless of name or pedigree, is chosen on the basis of taste. Listings are by variety and vintage and include a generous number of 375ml bottles in almost all categories, along with some older-vintage Cabernet Sauvignons in magnums and 3L size. Connell and David Bridges, wine buyer, select current release wines for the list. Some are held in the restaurant's ageing program for release onto the list in three to 10 years.

"Because the restaurant is located at the winery," comments Connell, "we have ideal conditions for cellaring wine, with our own 25-ft. by 18-ft. room right off the riddling room.

"Our by-the-glass wines include Domaine Chandon's core products: Brut, Blanc de Noirs, and Reserve, our prestige cuvées — Étoile, Étoile Rosé, 1986 Late Disgorged Brut, Cuvée 2000, and three limited production Domaine Chandon still wines, available only at the winery: Pinot Meunier, Pinot Noir, and Pinot Blanc. The standard pour for the sparkling wines is 4 oz. and for the still wines 5 oz., in a price range of $5 for the still wines, to $14 for the Late Disgorged Brut.

In 1996, sales of wine and food in the dining room were more than $2 million. Wine accounted for 28% of the sales. The following year, both total gross and wine sales rose, and in 1998, even with the El Niño storms, dinner business improved, and wine sales climbed to 42% of total restaurant sales.

"Looking to the future, we are waiting for a 1995 Teté de Cuvée to be released in the year 2000, which will be our first vintage-dated sparkling wine. We also will have Cuvée 2000 available now, a Late Disgorged Brut from 1992, to celebrate the Year 2000."

A six-course, prix fixe tasting menu pairs selected Domaine Chandon wines with suitable dishes created by Executive Chef Robert Curry, a graduate of the Culinary Institute of America, Hyde Park. He describes the cuisine as "modern French."

A captain/sommelier and dining room manager are on the floor at all times to answer questions about the food and wine and make recommendations for the greater enjoyment of both. Staff training, conducted by Chef Curry and Connell every other Thursday, familiarizes all wait staff with the weekly menu, so they can make informed food and wine suggestions.

The Domaine Chandon list is updated every two weeks. The standard 2.25 times wholesale cost is followed in pricing most current release wines, Connell reports. "Exceptions," he says, "are the 'impossible-to-find wines' that are so limited that they necessitate some research into retail price structures. In general, David will seek to set prices for rare wines at the price set by retail wine shops. Frequently, a diner, after consuming the wine, will tell his waiter that the Chandon price is below what he would have paid to get the wine from his local wine merchant."

The Restaurant at Domaine Chandon debuted in June 1977, five years after the winery opened. Lunch and dinner are served Wednesday through Sunday, all year, except for the first three weeks of January. Dress for daytime dining at the Restaurant is casual, with more formal attire appropriate in the evening. The seating capacity is 110 inside and 75 more outside.

Wente Vineyards

The by-the-glass wine list at Wente Vineyards Restaurant (Livermore, CA), which contains about 31 choices and changes every two weeks, is exclusively limited to wines produced by Livermore Valley wineries. Even with this comprehensive selection, the wait staff has the option of serving any Livermore Valley wine on the list by the glass if a patron requests it. Once a wine has been opened, the servers are free to offer pours to other diners.

Wente's bottle list contains 400 wines, including 74 Chardonnays and 80 Cabernet Sauvignons, with an excellent mix of 25 other varietal white wines, and a broad selection of Pinot Noir, Merlot, Zinfandel, and Meritage reds. The dessert menu highlights eight dessert wines by-the-glass (prices $6.50 to $12) and 12 ports, seven from Portugal.

Above the bar, just off the lobby at the restaurant, two chalkboards list four or five by-the-glass "Wines of the Day," which may include wines from any of California's grapegrowing regions. The restaurant is also licensed to sell beer and has a selection of six labels, including Kaliber non-alcoholic beer.

Lillian Steinle, restaurant manager, prices the wines. No set formula is used, but the basic mark-up is double wholesale. "We try to keep a range of prices to fit our guests, so the higher end may frequently be less, but generally speaking, our prices are within $5 of double wholesale," explains Carolyn Wente, Wente Vineyards president.

Between August and December 1998, Steinle reports that wine sales totaled 4,792 bottles and 17,524 glasses of wine. White wines were the largest segment of sales by the bottle and glass. Sparkling wine sales by the glass were 5,084 and red wine by the glass totalled 5,056. Largest sellers were Wente Brut and Wente Cabernet Sauvignon.

"Through the years," says Wente, "we have tried a variety of ways to inform our guests about interesting food and wine pairings, including listing certain wines with entrees. My feeling was that it became a cumbersome menu to read. When people come through our gate, they are already thinking of wine, and they expect our staff to be able to make good wine recommendations for every menu item."

To assure that this expectation is met, staffers at Wente attend monthly training sessions, each followed by a quiz, and applicants have to pass a test, with a score of 90 or higher, before they are hired. Chef Kimball Jones presents food and wine seminars quarterly, and the Chef de Cuisine leads the wait staff through a description of ingredients and method of preparation for every dish being featured each day.

The training program teaches the server to recognize subtle cues from guests, regarding their preferences and level of comfort with wine. The restaurant has 24 full time waiters, which increases to 50 during the peak seasons around the winter holidays and June through September. Most other winery restaurant owners have difficulty finding and retaining wait staff personnel, but the Wente complement remains unusually stable. "Because the restaurant is part of the winery, its employees receive the same full benefits package as other workers, and that encourages them to look upon their jobs as permanent careers, rather than stop-gap part-time work," says Wente.

Wente Vineyards Restaurant serves lunch and dinner daily and a Sunday brunch. The seating capacity is 192 indoors and 100 outside.

The influx of hi-tech companies into the Livermore Valley has greatly benefitted Wente Vineyards Restaurant. "We are one of very few white table cloth restaurants in this area," explains Wente, "and we have seen our growth far exceed our projections. In 1986, I thought we would be doing well to reach $950,000 income for the year, but in fiscal year 1998, the restaurant income alone topped $4 million. By the year 2000, our food and beverage service should reach $10 million annually."

Ferrante Winery

Ten years after starting Ferrante Winery in Geneva, OH, the Ferrante family opened the Ristorante, a full-service Italian restaurant. All decisions are made by family members: Peter Ferrante, Sr., owner; Nicholas Ferrante, winemaker; and Mary Jo Ferrante and Carmel Ferrante, who serve as co-managers of the restaurant and retail store.

The wine list, which features only Ferrante wines, changes two to three times each year. Nine white, four red, and two blush wines are featured on the list, by the bottle and by the glass. Glass prices are around $3 for an 8-oz. pour. There are also a Winemaker's Sampler Tray and a Proprietor's Selection Tray for $3.50 each or $5 for both. Each contains 10 1-oz. taster pours of 10 wines and one juice. Bottle prices range from $10.50 to $18.

Wine purchases, either for consumption at the restaurant or carry-out, equal sales of food and account for about 36% of the winery's total wine sales. The winery focuses on white wine varieties, so most purchases are white wines.

Servers and winebar staff go through a comprehensive wine training course including a tour of the winery and introduction to the complete line of wines by winemaker Nicholas Ferrante. Two six-hour sessions, conducted by restaurant manager Gary Farley, are devoted to wine, food, and proper serving technique. Chef Moses Rodarte assists with the training and designs special weekly food features for the menu. An illustration of a glass of wine is printed on the menu next to items prepared with wine.

The restaurant is open year-round, five days a week, and can accommodate up to 200 guests. During the summer months, there is outdoor seating for an additional 200 people. Live entertainment on the weekends and a series of special events as the seasons change serve to attract diners.

Chateau Souverain

The Café at the Winery at Chateau Souverain (Geyserville, CA) evolved to its present pleasantly informal ambiance and menu over the 20-plus years since the winery's founding. With seating available for 100 inside and 70 on the patio, the Café serves lunch daily and dinner every Friday, Saturday, and Sunday all year, except in January, when it is closed. Only wines produced at the winery or by sister wineries owned by Beringer Wine Estates are offered, but since the Chateau Souverain line is extensive, there are varieties to match with any dish prepared by Chef Martin Courtman.

Nine Chateau Souverain wines are served by the bottle, along with a Chateau St. Jean sparkling wine and a Beringer Cabernet port. The same wines are available by the 6-oz pour at prices from $3.75 for the Zinfandel Blanc to $10 for the 1995 Cabernet Sauvignon, Winemaker's Reserve. Bottle prices are $5 above retail.

Staff training includes field trips to the estate vineyards and contract growers to impress, particularly new hires, with how soil and location can affect the flavors in the wines. Each staff member receives fact sheets about each wine, and Rick Weinand, Café coordinator, winemaker Ed Killian, and Chef Courtman lead tastings of new releases. The tastings emphasize identification of the various flavor elements in both food and wine that make some combinations work and others impossible.

One out of every four dollars earned in the restaurant is spent for wine, with about two-thirds of the sales by the bottle. Sales of red wine are about 60% of the total.

Stone Hill Winery

At Vintage Restaurant at historic Stone Hill Winery in Hermann, MO, each server is given a manual on wine service and general wine information, which is then reinforced in class instruction by public relations director Patricia Held-Uthlaut, who has a degree in enology. Chef David Cross is also a participant, encouraging the wait staff to make suggestions of their own after tasting the food and wine combinations.

The winery, constructed in 1847, and at one time the second largest winery in the U.S., had been abandoned until James and Betty Held took over the building in 1965. In 1979, the Held family restored a former carriage house and stable for the restaurant. Guests are seated in what once were horse stalls, under pictures of former four-footed inhabitants named Dolly, Nellie, and Sid. The distinctive architecture and Old-World hospitality attract thousands of diners every year, and wine sales in the dining room account for approximately 2% of total wine sales volume.

Only Stone Hill wines are served in the 100-seat restaurant, presented by the bottle and by the glass. Lunch and dinner are served daily all year. There are approximately 18 selections, including a port and a champagne, plus three non-alcoholic juices. By the glass prices for a 5.9-oz. pour range from $1.25 for the juices to $5 for the 1996 estate bottled Norton. By the bottle, wines are $7.29 to $18.99 for current releases and $27.99 to $39.99 for older vintages. These are the same retail prices charged in the winery sales room.

Nashoba Valley Winery

Nashoba Valley Winery in Bolton, MA, features its own fruit wines in the winery-owned J's Restaurant at Nashoba Valley Winery. Opened in July 1998, the menu changes seasonally. J's is open all year for lunch Tuesday through Saturday, for dinner Wednesday through Saturday, and for Sunday brunch. The eight entrees on the dinner menu each have a recommended wine pairing.

Wine pricing is double retail, and the wine list is changed as new vintages are released. All 16 Nashoba wines on the list, except two (a Chardonnay from grapes grown in southern Massachusetts and a Vidal Blanc) are fruit wines, available by the bottle or by the glass. By-the-glass prices range from $3.50 to $10, for a 10-oz. pour of white wine or a 12-oz pour of red wine. Bottle prices range from $7 for Nashoba Cider to $45 for Azule.

Topolos at Russian River Winery

The restaurant now called Topolos at Russian River Winery in Forestville, CA, was already in existence when the Topolos family purchased the winery in 1978, but the facility has seen extensive physical change, and the menu focus has changed to traditional Greek dishes.

Most of the 25 wines listed are reds, for which Topolos is famous, and are produced at the winery. White wines to bracket the single Topolos Chardonnay are selected by Chef Bob Engel from other Sonoma County producers, with an emphasis on wines from neighbors within the Russian River Valley area. Bottle prices are set $7 above retail, with offerings between $16.50 and $38.50 per bottle. About 80% of the list is also served by the glass, in a range of $4.50 to $7 per 6-oz. pour.

"All wait staff members spend three years bussing before being advanced," says Engel, "and four training sessions are held each year. Two are planned at the beginning of summer, when we have a full crew in place, with the others held as the menu changes, seasonally." This instruction is essential, since we feature what we call 'The Vineyard Experience,' and the wait person must be able to suggest four wines which enhance each course of a four-course dinner. Size of the pour varies from a full 6 oz. of wine with the entree, to smaller pours throughout the meal for the sake of safety on the road."

Most wine sales in the restaurant are by the bottle, with more white wine served during lunch, and more red with dinner. Restaurant wine sales account for about 3% of total winery sales. "As production rises," states Engel, "that percentage tends to drop, since the restaurant is not also increasing in size, but total restaurant wine sales stay steady."

Topolos Russian River Winery Restaurant serves lunch and dinner daily from Memorial Day through Labor Day. Seating is available for 90 diners inside, and an additional 90 in the outdoor garden.

Wagner Vineyards

At Wagner Vineyards in Lodi, NY, service at the 200-seat Ginny Lee Cafe is tailored to the season, with lunch and dinner served daily May through September, and lunch served daily the rest of the year, with Sunday brunch available all year from 10:00AM to 2:00PM.

"Bill Wagner's philosophy has always been that wine and food are a natural and enjoyable combination," says public relations director Ramona Randazzo, "so it was an obvious step in the evolution of Wagner Vineyards to open the Ginny Lee Café in 1983, where guests could enjoy both. More recently, diners are also offered the opportunity to enjoy Wagner Valley micro-brewed beers, as well."

Only Wagner's 30 wines are sold in the cafe, including 16 whites, seven reds, four desserts, two blush, one sparkling wine, and one grape juice. All but four are available by the bottle at prices between $7.50 and $30. All wines, except an ice wine may be ordered by the glass in a price range from $1.75 to $7, for a 7-oz. pour.

Wine and beer recommendations are featured with every dish on Chef/ Manager Thomas Wise's menu, and the wines on the list are arranged by relative sweetness, from dry to sweet, to help diners do their own pairing.

About 2% of the winery's total wine

sales occur in the restaurant. The greatest proportion of the sales (68%) are white wine, and 85% of total sales are by the glass.

At Wagner Vineyards, each wait staff employee is provided with a packet of written information about the winery, wine production, and the logic guiding the pairing of menu items with Wagner wines. They are also trained in proper presentation of wine and proper table service. Before taking their positions on the wait staff, each employee spends several shifts bussing tables and observing the correct procedures.

Thornton Winery

Cafe Champagne at Thornton Winery in Temecula, CA, was opened in 1988, with inside and outside seating for 160 diners. Lunch is served Monday through Saturday and dinner Tuesday through Sunday, with a special brunch menu on Sunday. Each menu item, except for soups and salads, carries a suggestion by winemaker Jon McPherson for a Thornton wine to enhance the dish.

About 30% of the 58 wines on the list — 31 red, 25 white, and two blush — are offered by the glass at per-glass prices ranging from $5 to $9, for a 4 to 5-oz. pour.

Many premium California areas are represented, along with some Washington state wines and several French and Italian wines. Thornton's sherry, by the bottle or glass, tops the After Dinner Specialties page, which includes eight cognacs, six ports, and a grappa. Bottle prices run from $20, for a Callaway Temecula Sauvignon Blanc and a pair of Chilean Merlots, to $150 for the 1994 Pine Ridge Andrus Reserve. Most are between $25 and $40 per bottle.

Staff members are trained by managers and head-waiters and have the opportunity to taste wine and food pairings when each new seasonal menu is introduced.

Villa Milan Vineyards

One of the most self-contained restaurants is the Villa Milan restaurant at Villa Milan Vineyards (Milan, IN), owned and operated by John and Dorothy Garrett. Both husband and wife serve as chefs, preparing Italian-style meals in an intimate European atmosphere. Winemaker John Garrett also personally instructs their small serving staff in the finer points of wine service and food compatibility.

The restaurant grew from a retail shop serving some food at the winery's founding in 1984 to a full menu restaurant six years later. In the spring and fall, seating for 60 guests is in a portion of the outdoor patio warmed by infrared heaters. In the summer, 120 diners can be accommodated on the full patio and in a 56-ft. gazebo, overlooking the vineyards and a small fishing pond.

During the summer months, Villa Milan serves lunch and dinner, daily except Sunday, from 11:00 AM to 8:00 PM, Monday through Thursday, and until nine, Friday and Saturday. Winter hours are Monday through Saturday, with service starting at 4:30 PM, and ending at 8:30 PM, Monday through Thursday, and half-an-hour later, Friday and Saturday.

Only Villa Milan wines are served: Vino di John, a dry red made from the DeChaunac grape; a dry Vidal; Catawba wine, made as a semi-dry white and as a semi-sweet rosé; a semi-sweet Concord; and a plum wine. All the wines are sold by the bottle and by the glass, with a five-oz. pour. The bottle prices range from $8.50 to $10, and by the glass, $2.50 to $3.

Bully Hill Vineyards

Possibly the most unique wine list at any winery-owned restaurant is that presented to guests at the restaurant at Bully Hill Vineyards in Hammondsport, NY. As patrons are seated, they receive a copy of the laminated Bully Hill Vineyards winery fact sheet and wine list. On one side are a brief history of the winery and Greyton H. Taylor Wine Museum, a map of the Finger Lakes Region, and an explanation of the Native American and French-American hybrid grape varieties that the winery produces. Additional information includes the winery's rationale for using synthetic cork and an explanation of tartrate crystals.

On the reverse side are full-color reproductions of the labels of all the Bully Hill wines, arranged by wine color — 16 red, 22 white, five rosé, and four specialty wines. Labels are presented in degree of residual sugar from dry to sweet.

Bottle and glass prices are also listed. Nine of the 47 wines are available by-the-glass as well as the bottle. Pour size is 8-oz., and glass prices are between $2.75 and $3.50.

Bully Hill Vineyards serves lunch daily and dinner Friday and Saturday evenings. In 1999, Chef Lillian Taylor plans to add wine suggestions with each entree on the menu, which changes with the seasons. This will add to the value of staff training which begins with visits to the tasting deck at the winery to sample wines with the hospitality staff. More in-depth information about the wines and menu items is presented prior to station assignments by the guest services manager. A decided advantage to the performance of the wait staff is that most of the servers have previously been tour guides at the winery.

Wine sales are 10% of restaurant sales volume, with wine by-the-glass the major choice at lunch, and bottles of wine more often selected for dinner. Seating capacity is 75 indoors and 100 outside.

> Wine sales at these restaurants are 2% to 36% of the wineries' total sales.

Tabor Hill Winery

Perched high on a hill above the vineyards, the restaurant at Tabor Hill Winery (Buchanan, MI), welcomes visitors with a casual farm country setting and menu based on the wine and food appreciation movement called, "Slow Food." Paul Landeck, vice-president/general manager of Tabor Hill states proudly that Tabor Hill's is the first Slow Food convivium (chapter) in the U.S.

Founded in Italy in 1986, Slow Food is an international movement established to celebrate the pleasures of good eating and preserve local products and cooking traditions, which are threatened with extinction by fast food and supermarket standardization. In chapters all over the world, members just want to slow down and savor the fellowship that comes with the knowledge of enjoying a healthful, delicious meal with friends and family. The Tabor Hill convivium meets regularly at the winery, which sponsors the club, and has designed a website, www.slowfood.com.

The restaurant, which was added to the winery in 1980, seats 75 and is open from May through November for lunch and dinner, Wednesday through Sunday. December through April, the restaurant is open only Friday through Sunday.

The wine list of 18 to 25 offerings is limited to wine produced by Tabor Hill, with about 75% of the list devoted to white wines. Winemaker Mike Merchant reserves small lots of special wines to be served exclusively in the restaurant. These bottlings and older library wines are not even presented in the tasting area. All the wines are available by the bottle or by the glass. Bottle prices range from $12.95 to $32.95, and a 6-oz. pour costs $3.25 to $7.50. Wine sales in the Tabor Hill restaurant account for approximately 25% of restaurant sales and 5% of overall sales at the winery.

All servers are introduced to Tabor Hill wines by the tasting room staff, and instructed in the proper ways in which to serve and pair the wines. Since the winery, tasting room, and restaurant are all located in the same building there is constant staff interaction. Off-premise sales are encouraged by a note on the menu offering special discounts on the purchase of wine or juice from the retail bar.

Most of the grapes for Tabor Hill's still wines, sparkling wines, and non-alcoholic beverages are estate grown, and the most popular wines are a classic demi-sec and an American Merlot.

Messina Hof Wine Cellars

Vintage House Restaurant at Messina Hof Wine Cellars (Bryan, TX) mixes show business pizzazz, practical cookery lessons, and menus designed by Merrill Bonarrigo, author of *The Ultimate Wine and Food Pairing Cookbook.* and co-owner of the winery with her husband Paul who is winemaker. The restaurant seats 150, and is open for lunch and dinner, Thursday through Saturday, and lunch only on Sundays.

The dining room is awe-inspiring. Oak barrels cover one wall, another wall offers a picturesque view of vineyards, and the other two walls have stained glass windows 10 feet tall. Fifty Messina Hof wines are offered by the bottle, but there is no by-the-glass program.

The wine list changes every month and about 60% of the wines offered are white. Prices, per bottle range from $5.99, for the Chenin Blanc, White Zinfandel, and the proprietary Traditions Blush, to $24.99, for Private Reserve Papa Paulo Port. Wine sales in the restaurant are split almost evenly between red and white varieties, and restaurant wine sales account for 5% of the overall winery sales volume.

The entire Messina Hof wine list is presented, along with occasional "Winemaker's Selection" library wines selected from the Messina Hof cellars. "Though the menu only lists our own wines," says Merrill Bonarrigo, "our guests are invited to bring their own bottle of wine if they like for a $4 corkage fee."

Chef David Frost is a skilled master of ethnic cuisines, and the menu describes each dish, appetizer through entree along with a strong suggestion of a style or variety of wine. All of the dishes are also prepared with Messina Hof wines, and salads are dressed with a signature Garlic Merlot Dressing.

Managers provide monthly staff training with wine descriptions, wine and food pairings, and restaurant operation, along with refresher courses for "polishing" service performance. Knowledgeable staff is a genuine necessity for the winery, which has a calendar of 28 events annually. The most elaborate affair is the "Wine Premiere" in late November. Paul Bonarrigo unveils the new vintages and dedicates the release to his forebears, who have been making wine in Messina, Sicily, for two centuries.

The day-long event begins with a cooking school session, conducted by a guest chef. Merrill Bonarrigo hosts a four-course theme luncheon and demonstrates how wines complement foods in flavor and aroma. A general blind-tasting of medal-winning wines from the *Dallas Morning News* International Wine Competition follows, with participants voting for their favorites. Tours of the winery are held throughout the day, and the gala conclusion is a Wine Premiere Reception and The Ultimate Wine Premiere Dinner.

Lanthier Winery

The unique wine list at Lanthier Winery Restaurant (Madison, IN) features 14 wines made from native American varieties, commonly thriving in the midwestern states including "Chautauquablumchen," a pink Catawba debuted with the 1997 vintage. The list provides an excellent description of each wine with suggestions for the most compatible food pairings. All of the wines are available by the glass at $3.33 for a 4-oz. pour. Bottle prices are all below $11. White wines in a sweet or semi-sweet style outsell all others at the restaurant by about two to one.

Lanthier Restaurant is small, seating only 40 patrons in a dining loft overlooking the tasting room, and in a French country garden, weather permitting. It is open for lunch daily and serves dinner from five PM to eight PM each Saturday. The cuisine is French/Italian, saluting Cellar Master Chris Lanthier's heritage, and many menu notes refer to the family source of the recipe.

Each month, Lanthier hosts a "Cellar Master's Dinner," which includes the diner's choice of a bottle of any house wine and a special dessert. Two choices are offered: the Lanthier Selection for $23.81, and dinner for two featuring two main courses for $47.62. Dinners include, in addition to wine and dessert, a traditional Italian bruschetta appetizer, Chef Barbara Chitwood's special minestrone, vegetable, and warm garlic and herb breads.

Lanthier reviews the menu with his guests, recommending certain wines to enhance each dish, and providing reasons for his choices. With the dessert, he most frequently suggests his favorite wine, Rifleport White, a fruity, aromatic wine with overtones of Muscat. It is also suitable for drinking with main courses as well as dessert, he assures his audience.

Heather McKenzie, restaurant manager, oversees a monthly, two-hour training session for the staff . ■

Tasting room tune-up

by Craig Root

With the busy season ahead, it's a good time to assess your tasting room. A modest amount of work now can insure a more profitable and harmonious operation. In addition, if you're a manager, it can insure that you meet goals that you and your supervisor have set for 1999. Ask yourself these important questions in the following categories:

Staffing

The first and most important area to analyze is staffing.

- **Are you sufficiently staffed?** You can always flesh out your employee roster with part-timers. Schoolteachers, retired folks, homemakers, and students are good groups to look to for part-time help. In addition, remember that you can use staggered shifts to keep your labor costs low. For example, have your full-time people open and then bring in part-time staff from 11AM or noon until closing.

The consequences of being poorly staffed are poor customer service; the very real chance that you, the manager, will have to come in on your day off (if someone calls in sick); and the potential of bad morale because your regular staff feels overworked with no flexibility to replace themselves in emergencies.

Morale

Do an honest evaluation of your staff. If their "cheerful tank" is low because of bad morale, your customer service will be negatively affected.

- **What is your turnover rate?** The best barometer of bad morale is high turnover. Granted, tour guide/retail staff are frequently part-time with high turnover, but is your turnover rate higher than normal?
- **What type of manager are you?** Are you quick to compliment and appreciate, or are you a manager who ignores the good features of your employees and then pounces on them when they make mistakes? Are you leading by example and working the counter — in addition to selling your wine club on weekends — along with everyone else? I'm well aware that managers are busy, but you can always spare a little time to set an example.
- **Is your staff being adequately compensated?** Call around your area and make sure that you are at or above average. If top management won't provide the necessary funds, use incentive programs. For example, decide what are average daily sales figures and reward the staff on days that beat the average with points that can be used as credits in your tasting room. You'll have a win-win situation, because staff members don't get the incentive until they have already provided more revenue for the winery.

Unlike monthly goals, an incentive program rewards the staff responsible for higher sales. In addition, with monthly goals, you run into the thorny problem of calculating who worked more hours or covered weekends or holidays and therefore should receive more points.

Another advantage of giving merchandise as a reward is that it encourages the staff to interact with the merchandise, so they do a better job of selling it. For example, when speaking with a customer, the staff member can say: "I just had that pasta sauce with our Merlot last night, and they taste great together." Testimonials are always an excellent way to sell any product.

- **Is your tasting room a fun place to work?** Bring in bread and cheese from time to time to nosh on. Plan some activities outside the winery. Jennifer Lamb, manager of St. Clement Winery (St. Helena, CA), always takes her whole crew to the Napa Valley Shakespeare Festival with several hampers of great food. "My staff always appreciates the great time we have, and they come back to work with an upbeat attitude" reports Lamb.

Staff performance/training

If you're sure that morale is up to snuff, consider staff performance and training.

- **Do your staff greet everyone within 15 seconds?**
- **Do they ask open-ended questions?** Examples: "What foods do you like with Cabernet?" or "Where are you from?" or "How have you liked the restaurants in our area?" These questions elicit dialogue that really helps sales.
- **Is the staff selling without being pushy or manipulative? What do the staff do when there are second and third rows of visitors at your tasting counter?** Do they come out from behind the counter to pour?

These last few questions are a function of training. If you can't answer yes to all of them, it's time to examine your training procedures.

- **Do you have first-rate initial and ongoing training with written and verbal guidelines?** If you simply ask new staff members to "shadow" the existing staff, you must answer "No" to this question.

Physical aspects of your operation

Once you've evaluated personnel factors, consider the tasting room itself.

- **Is the non-wine item selection up-to-date and competitive?**
- **What are the acoustics like when there are more than 15 or 20 people in your room?** A noisy room makes for a negative experience and hurts sales. This can be easily corrected with sound dampening material.
- **Is your printed material (signage, brochures, and price lists) clean and professional or outdated and ragged?**
- **How sales-oriented are your discounts?** Everyone has a 10% discount on 12 bottles. How about a 5% discount on six bottles?
- **How effective is lighting of displays?** Are your wine and non-wine items attractively showcased, or are there dark corners in your room? Do people have to stop and look at things or can they glide by without stopping? Put your most appealing items in the back (in the same way that supermarkets put milk and other essential dairy items in the recessed corners of their stores), so that customers have to interact with other items as they move toward your very popular Cabernets.
- **Are your grounds and rest rooms inviting?** Both should be clean and dressed up with flowers. Visitors are turned off by the messy and mundane.

Statistics/inventory concerns

- **Do you keep an accurate count of visitors?** A count allows you to calculate your average sales per visitor (divide number of visitors into the gross sales). There are variations, of course, based on whether your average bottle cost is $10 or $50, but most tasting rooms should average about $15 to $25 per visitor. If you have a wine club and automatically ship wine to members on a regular basis, you should be signing up 1% to 3% of your visitors. Are you?
- **Is your inventory variance within an acceptable amount (about 1% or 2% plus or minus)?** If not, you may need to go to more stringent procedures, such as doing inventory every week instead of every month (depending on the size of your operation). Since most everyone hates doing inventory, you and your staff will get a lot more efficient at it and will be able to go back to a monthly inventory as soon as you have completed two or three successful weekly inventories.

Outreach after the customer has left

- **Do you have a wine club or a friends of the winery database?** You need a professional newsletter and wine offering program to support the data base. Remember, the purpose of the tasting room is not only to accrue profits from visitors and give them a great experience, but also to keep your winery's name fresh in their minds throughout the year. Your goal is to generate revenue from them after they have left the premises.

A thorough self-analysis regarding these points can make a huge difference in the level of success you and your tasting room can achieve by the end of the year. ■

Please look for future articles in this series. If you have comments or suggestions, call Craig Root at 707/963- 7589. Craig Root is a 26-year veteran of the wine and hospitality business, including 15 years at Beaulieu Vineyard. He has worked in all capacities at hospitality centers, primarily as manager. For the past seven years, he has served as a consultant for visitor centers through his own company, Craig Root & Associates.

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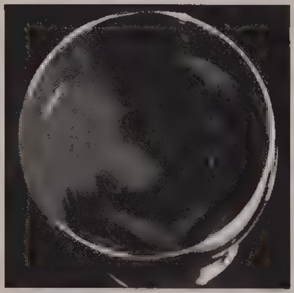

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CALIFORNIA ASSOCIATION OF WINEGRAPE GROWERS

RESOLVED: Only one industry meeting in January 2000

by Karen Ross, president CAWG

My grandmother once told me that time goes faster with each passing year — she should know because she just turned 95! I'll have to say she's right based on the activities of our organization in the past year — 1998 seems like a blur! It is a privilege for me to report to you on California Association of Winegrape Growers (CAWG) activities undertaken on your behalf.

A unified industry

Unity is the theme for a group of industry leaders who are working to create a long-term strategy to foster the success of the American wine industry into the next century. CAWG has participated in a series of meetings and supports the effort, which is called WineVision. In fact, WineVision was inspired by the 1998 Unified Symposium program and is an example of how the dreams of the Unified Symposium's creators are coming to fruition — that is the broader perspective of a unified industry working together to sustain our viability. As a partner in the Unified Wine & Grape Symposium, CAWG has worked to continually improve the programming, and this year we concentrated our efforts on making one winter wine show a reality.

The Unified Wine & Grape Symposium has acquired WineTECH/GrapeTECH, and there will be one wine industry show January 25 to 27, 2000. The acquisition allows us to provide the industry with a single show in the winter and dedicate the entire resources of the industry to providing a show that completely meets the needs of growers, vintners, winemakers, researchers, suppliers, and allied industry.

We believe that this acquisition best addresses the needs of the industry, eliminates duplication, and is in the best interest of the entire wine industry. We have purchased the WineTECH/Grape TECH name and its related tangible and intellectual property. This includes a five-year non-compete covenant. After Ullo International, the former owner of WineTECH/GrapeTECH, and Unified Wine & Grape Symposium, LLC, reviewed all options, including the possible merging of the two shows, it was evident that a full acquisition made the most sense.

We have a greater base of program resources available as a result of the purchase of WineTECH/GrapeTECH. By expanding the program to three days, we can cover as many of the important topics as possible and allow more time for guests to visit with exhibitors.

Unified Symposium serves as a clearing house of information important to vintners, growers, and other industry professionals. The 1999 Unified Symposium hosted the largest trade show of its kind in the U.S., with more than 350 vendors displaying products and services.

Labeling

CAWG spent considerable time in 1998 on an issue that reflects our basic principles — label integrity. The history of this organization speaks eloquently of our growers' dedication to assuring that what the consumer sees on the wine label is what the consumer gets in the wine bottle.

CAWG has supported vigorous enforcement of a comprehensive, accurate paper trail from vineyard to bottle to provide consumers confidence that the label accurately reflects the varietal contents. We have pursued consistent rules to make foreign competitors meet the same criteria, so they aren't able to label a bottle with a varietal that's not even grown in their country, for example.

More than a year ago, CAWG expressed opposition to "other than standard wines" (OTS) bearing appellation and varietal designations. The products in question contain wine, flavoring, water, and sugar and carry labels like California Chardonnay with Natural Flavors. With a varietal name prominently displayed, these labels are misleading, because they convey the impression that they are varietal table wines, which are 100% grape wine.

We felt strongly enough about this that we commissioned a consumer survey in June 1998, which confirmed that consumers do, indeed, trust the information on wine labels. They overwhelmingly felt the term "with natural flavors" meant an enhanced all natural product and did not see that this product was significantly different than any other grape wine.

In August 1998, CAWG asked the Bureau of ATF to issue guidelines to clarify that a statement of composition for an OTS wine cannot include varietal designations. We offered to work with the industry to create a category for flavored wine products once that loophole was closed. We feel the position we've taken will maintain trust with the consumer ***and*** protect the value of varietal names, which represents a huge investment on the part of California growers and vintners.

While CAWG enthusiastically supports product innovation and efforts to expand the consumer base for wine, we cannot afford to do it at the expense of what has made us so successful — that is creating markets for varietal wines by establishing names consumers easily recognize and request.

There are honest disagreements within the industry about how this issue should be resolved, and CAWG has consistently pledged to work with others to create a separate category to accommodate new products. There are several that have been introduced — some are grape wine products with a very small amount of natural flavors added, and some are lower alcohol products that list wine, water, sugar, and flavorings as ingredients but display a prominent varietal designation on the label.

We are participating in meetings with a Wine Institute subcommittee to see if there is a way to accommodate new product growth without harming existing, successful categories. I truly hope that, in January 2000, I will be reporting a fair and reasonable resolution to this situation — one in which the growers' had a voice because CAWG was working for them.

Trade

It is exciting to report progress we made this year in the trade arena. The removal of trade barriers was an objective when CAWG was formed, and it is especially critical today in the competitive global market. On behalf of growers, I was very proud to be a signatory in Barcelona to an agreement between EU wine industry representatives and American wine industry representatives regarding the need for our governments to negotiate a long-term agreement to allow more free movement of wine between our markets.

Nothing proved more effective than for the Europeans to see U.S. growers and vintners united in our message to the government's trade representatives. At the end of the year, the EU consented to a five-year extension of our current agreement (normally renewed on a one-year basis) while a permanent one is negotiated.

Research funding

Staying true to our mission, CAWG continued to make it a priority to work on obtaining support for research funding to reflect the growth in our industry. Grapes are now the country's sixth most valuable agricultural crop, yet public support is not proportionate to that given other commodities. Thanks to the efforts of the American Vintners' Association, CAWG, and Winegrape Growers of America, the federal budget once again increased funding for viticulture and enology, and we are now at $1 million.

Here in California, I am pleased to report that CAWG, Wine Institute, and Family Winemakers successfully doubled funding in the 1998-1999 state budget to $500,000. Such public support would not have happened without the private match provided by the American Vineyard Foundation, and we will continue to actively raise funds for AVF through our own resources and by encouraging every grower to make a contribution. Funding research is absolutely the key to maintaining our economic and environmental sustainability and making our future a bright one!

Youth

Speaking of our future, CAWG took its first steps this past year to invest in our future in another way — our youth. We've gone through the process of establishing a scholarship fund for the children of vineyard employees who will attend a two-year or four-year public college in California. Our goal is to provide assistance to those students who might not otherwise seek an advanced education, and it is a reflection of the respect our growers have for all the workers who help make this industry successful. Based on the applications, the program works, and we awarded five scholarships. We are now setting up a foundation to take charitable contributions, so we can sustain the annual multi-year scholarships we've started and grow the program to assist more students.

New programs in 1999

I want to mention briefly two new programs we have started in 1999. First of all, our grassroots program of connecting winegrape growers with members of the Legislature has gotten off to an excellent start with our annual Day in the Capitol. Things in Sacramento have changed dramatically, but your involvement can make a huge difference in helping people unfamiliar with our industry better understand the impact of the issues they're asked to consider.

In addition to a dinner for administration officials and legislative leadership on March 23, CAWG hosted a breakfast for legislators and their staff on March 24, followed by a full day of appointments for teams of grower-members and associate supporters. This annual event provides an important opportunity to establish relationships with policymakers and let them hear directly from the people who make our industry an important part of California's economy.

Keeping up with technology, CAWG launched its web site in early February. We want this to be a source of information for our membership, others in the industry, and of course, the public. Our monthly newsletter, *The Crush*, the annual *Winegrape Buyers' Guide*, and the popular document, *Contract Considerations and Guidelines* are available in a members' only section.

We will also be posting legislative updates and CAWG position papers on the web page. The site also provides a link to the Department of Food and Agriculture's Agricultural Statistics Service where th epublic can review *Grape Crush Reports* and *Grape Acreage Surveys* as far back as 1990. We welcome your suggestions for what would make this a useful tool for you. Check us out at www.cawg.org and let us know what you think!

Economics, environmental, and labor issues

Winegrapes are one of the few shining stars of agricultural crops in recent years. CAWG is proposing that we work with others in the industry to more exactly quantify the economic impact of our industry by undertaking a comprehensive economic impact study which will help us better communicate the value of the industry to public policy makers. But given today's society, it's not enough to talk about the economics of our business, we must also communicate the environmental values of our operations, and winegrape growers have much to be proud of in that regard.

The explosive growth in our industry has brought us a lot of attention and scrutiny — especially with regard to our environmental and labor practices. CAWG has contracted with the UC Davis Sustainable Agriculture Research and Education Program (SAREP) to develop a resource guide on environmental issues in vineyard development.

This project is a pro-active effort to make information readily available to growers about the environmental issues that need to be considered in vineyard development and about where they can go for information and guidance. The stipend we've made available will support a review of existing regulatory mandates at the federal and state levels and of applicable county ordinances in specific winegrape growing regions of California. Our Special Projects Committee will act as an advisory and editorial board for the project.

We are working with raisin and table grape organizations, SAREP, and U.S. EPA Region 9 on a Food Quality Protection Act (FQPA) Grape Partnership to develop crop/pest profiles and pest management alternatives that will not only provide information we need to respond to the implementation of FQPA but will also help us identify short- and long-term research needs for alternative pest management systems.

Use of data from interviews and literature review will produce a document that clearly describes the grape pest management system (pests and pesticide use date) in California. It will be based on the important pests that drive agricultural chemical use in grape production and target key Group 1 FQPA pesticides. The document will also describe all validated and promising alternatives that are ready for demonstration projects or already a part of numerous demonstration projects happening in California (Biologically Integrated Vineyards Systems, Central Coast Vineyard Team, Lodi-Woodbridge Winegrape Commission, etc.). It will also highlight where there are no known alternatives.

Finally, we are partnering with Farm Employers Labor Service to provide timely information about labor regulations to help growers comply with the law.

None of this would have been possible without the foundation built by all those who came before us. It was their vision, their commitment, their integrity, and perhaps their stubbornness that got us here. As I look at the current leadership and those coming along behind them, I am confident and enthusiastic about the next 25-year chapter in CAWG's history book. You have given CAWG your support, and CAWG has given you a strong voice in an industry that truly makes California special! ■

Edited from the report by the President of the California Association of Winegrape Growers to members at the Annual Meeting in Sacramento, CA, January, 1999.

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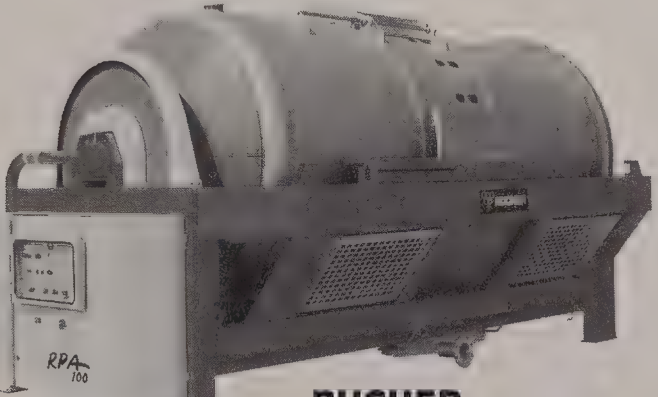

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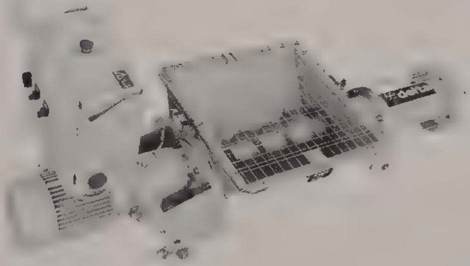

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Oak from Forest to Glass

AMERICAN SOCIETY FOR ENOLOGY & VITICULTURE, Eastern Section Conference Wednesday-Friday, July 14-17

Location: St. Louis, Missouri

Wine quality is largely the result of grape characteristics. Wine aroma and flavor can be influenced by barrel fermentation and storage as well. Ideally, aromas and flavors will be balanced and integrated to give a complex, multi-dimensional product.

Grapegrowers, suppliers, winemakers, and research personnel will convene in St. Louis, MO in July for an international conference titled "Oak from Forest to Glass: Practical Management of Oak and Wine" sponsored by the American Society for Enology & Viticulture/Eastern Section (ASEV/ES). Co-presenter of the conference is Southwest Missouri State University in celebration of the 100-year anniversary of its research campus at Mount Grove, MO.

"The focus of the conference is the practical applications of oak in winemaking," says meeting chair, Dr. Murli Dharmadhikari of Southwest Missouri State University. "Through numerous presentations and sensory evaluations, it is hoped that participants will gain a sense of how oak can be used to delicately alter and blend flavors.

"We would like to recognize a number of organizations for their generous support, which has made this conference possible: Southwest Missouri State University, World Cooperage, Illinois Grape and Wine Resources Council, Lallemand, Inc., Wine Bottle Packaging, Arkansas Wine Producers Association, Indiana Wine Grape Council, Michigan Grape and Wine Industry, Missouri Grape and Wine Program, and Virginia Wine Growers Advisory Board."

The three-day conference will begin with a full-day tour of the World Cooperage barrel-making facility and oak forest in Lebanon, MO. How the barrel is produced is important because it determines how the oak will potentially influence the wine's aroma and flavor. Production considerations include the origin and age of the wood, method and location of seasoning, barrel size and stave width, cooperage techniques, and wood toasting. All of these factors can influence the volatile components extracted from the barrel and thus the sensory features of a wine.

"This is an important conference designed to provide practical information for the industry," says Dr. Bruce Zoecklein, Department of Food Science & Technology at Virginia Tech, Blacksburg, VA. Wine styles differ because of the tremendous number of variables that come into play in grapegrowing and in the winemaking process. Overlaid on the basic quality of the grape is the mark of the winemaker. In barrel fermented and/or barrel aged wines, it is desirable to have a series of wood "notes" to support the aroma/flavor panoply of the wine. It is hoped that this conference will help winemakers develop and hone the skills necessary to use barrels and barrel alternatives to produce well-balanced, integrated wines.

A skillful winemaker must be able to adjust production variables to emphasize one or more of the aromas, flavors, and textures. Thus it is helpful for the winemaker to know about wood chemistry and the flavors that might affect the wine.

On July15, Dr. Vernon Singleton of University of California, Davis, will discuss the use of barrels in winemaking. Dr. Barry Gump of California State University, Fresno, will review how oak wood constituents are extracted as well as their contributions to wine flavor.

Dr. Jim Swan, Tatlock & Thomson, Glasgow, Scotland, analytical and consulting chemist for World Cooperage, will present transformations during oak seasoning, the effect of seasoning on wine composition and sensory qualities, and the contributions of extracted oak wood constituents to wine aroma and flavor. Ed Larmie, director of sales and marketing, World Cooperage, will discuss the effects of oak wood seasoning, oak heating, and toasting on wine quality with a wine tasting. Michael Martini, winemaker at Louis M. Martini Winery, St. Helena, CA, will present the various wood flavors in red and white wines with a tasting of relevant Martini wines.

There are a number of barrel fermentation considerations that can influence aroma and flavor, including barrel pretreatment, age of the barrels, timing of the fill, fermentation temperature and rate, and whether the fermentation is produced by yeast only or by a mixed culture.

Frequently used in Burgundian-style Chardonnay, lees contact can contribute to the complexity of the wine by integrating yeast characteristics with fruit and wood flavors. Dr. Vincent Gerbaux from Institut Technique de la Vigne et du Vin in Dijon, France will discuss how famous winemakers in Burgundy reconcile a strong tradition with new technologies. Peter Bell, winemaker at Fox Run Vineyards, Penn Yan, NY, will discuss production of barrel-fermented Chardonnay. Christina Benz, winemaker at Murphy-Goode Winery, Geyserville, CA, will discuss using *sur lie* to enhance oak integration; she will also direct a tasting of Murphy-Goode Chardonnay wines from yeast lees stirring trials.

Innovative barrel production techniques and their influence on Chardonnay and Cabernet Sauvignon and a tasting will be presented by winemaker Michael Schroeter of Geyser Peak Winery, Geyserville, CA. Duane Wall, vice president of Nadalie Cooperage, Calistoga, CA, will discuss the *terrior* of oak and will use wines that have been in contact with oak wood from various states as examples. Phil Burton, owner of Barrel Builders, St. Helena, CA, will discuss and demonstrate repair of wine barrels.

Friday, July 16, will begin with a discussion of current cooperage practices and future development by Henry Work, general manager of Canton Cooperage, Lebanon, KY. Bob Rogers, owner of Innerstave, Sonoma, CA, will discuss barrel alternatives. Assistant winemaker, Evelyn Heraty of Clos Du Bois Winery (Geyserville, CA) will discuss Sauvignon Blanc wines from barrel alternative trials and offer a tasting of the wines.

There will be a winemaker panel discussion of the eastern U.S. perspective of oak barrel usage in premium wine production and a tasting. Panel members are: Mark Frizsolowski, Pindar Vineyards, Peconic, NY; Dave Johnson, Stone Hill Wine Co., Hermann, MO; Dave Miller, St. Julian Wine Co., Paw Paw, MI; and Tom Payette, Prince Michel Vineyards, Leon, VA. This will be followed by Barbara Lindblom (winemaking consultant, Santa Rosa, CA) reviewing how to conduct oak trials in the winery.

After a luncheon featuring integration of oak flavors in wine, Professor Ken Fugelsang, California State University, Fresno, will discuss microbial contamination of barrels and how to evaluate and treat spoiled barrels. According to Fugelsang, "Two of the more controversial yeasts that grow in juice and wine are *Brettanomyces* sp. and its generally less well-known sporulating ('perfect') equivalent, *Dekkera* sp. Historically, winemakers have viewed *Brettanomyces* sp. as producing spoilage in wines where it could grow. Despite traditional negative connotations surrounding the yeast, some are now questioning whether or not subtle 'Brett' character, in some cases, may play a positive role in flavor and bouquet development."

Phil Burton will review barrel management in the cellar and provide information on buying and treating new and used barrels, handling and storage of full and empty barrels, cleaning and sanitizing barrels, as well as ullage, topping, and racking. Heraty will review electronic barrel tracking and automated barrel cleaning. The final presentation of the conference will be a panel discussion of general barrel management with Burton, Heraty, Schroeter, and others.

The conference will be held at the Marriott St. Louis Airport (I-70 at Lambert Airport, St. Louis, Missouri). The conference fee is $185 (plus a $20 late fee after June 18) and $25 for the theme luncheon on Friday. Following the conference on July 17 will be the ASEV/ES Annual Meeting and technical sessions.

For registration information for either the Oak Conference or the Annual Meeting, contact:

E. Harkness, Secretary of ASEV/ES, Dept. of Food Science, Purdue University, W. Lafayette, IN 47907; tel: 765/494-6704; fax: 765/494-7953; email: harkness@foodsci.purdue.edu.

OAK IN WINEMAKING Symposium

June 28-29

Location: Reno Hilton, Reno, NV

International scientists, winemakers, and research enologists will share their latest results on oak chemistry, and many practical experiments, during the ASEV-sponsored Oak in Winemaking symposium preceding the society's annual meeting on June 30-July 2, 1999.

Monday's program will highlight recent research in oak and its effects on wine and brandy. Dr. Jean-Luis Puech of INRA, Montpelier, France, will present data on oak tannins and outline the Tonnellerie 2000 project in France. Pascal Chatonnet of the University of Bordeaux will present "Objective evaluation of the intensity and the homogeneity of barrel toasting: Application for quality assurance." Jim Swan, Tatlock & Thomson, Glasgow, Scotland, will address the "Influence of oak seasoning and toasting on wine quality." Dr. Johnathan R. Mosedale with INRA will focus on "Species and microclimate induced variation in oak components and their effect on wine." Andrew Waterhouse, UC Davis, will compare "Ellagitannins from seasoned and toasted oak and chestnut." Jeff McCord, E&J Gallo Winery, Modesto, CA, will present: "Toasting and oak flavor compounds."

The oral session will be complemented with a poster session, and the day will end with a tasting called "A comparison of U.S. oak forests," presented by Tonnellerie Francaise, Calistoga, CA.

Industry experience will be stressed on Tuesday with the

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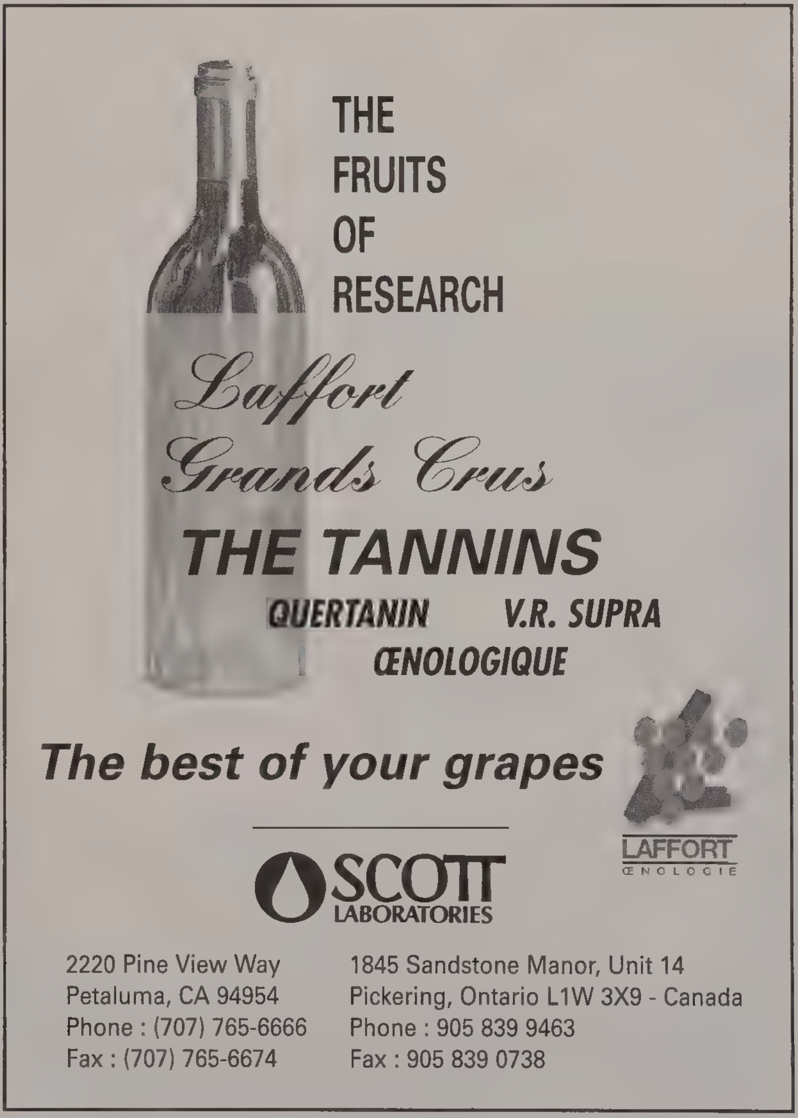
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California Enological Research Association Barrel Committee presenting its sensory methodology for evaluating the effect of oak in winemaking, organized by Barbara Lindblom. Several experiments will be presented which compare different barrels and barrel alternatives. Several winemakers will then discuss their experience with oak, and there will be a panel discussion on barrel alternatives.
Inquiries to: Andrew Waterhouse, ASEV, PO Box 1855, Davis, CA 95617; tel: 530/752-4777; fax: 530/752-0382; email: alwaterhouse@ucdavis.edu.

VINE SPACING Symposium
June 29

Location: Reno Hilton, Reno, NV

Experts from around the world will address the impacts of vine spacing, from economics to equipment in this Vine Spacing Symposium, which will precede ASEV's annual meeting on June 30-July 2, 1999.

Topics: "International perspective on vine spacing," Phil Freese, consultant, Winegro, Healdsburg, CA. "Economic considerations on vine spacing decisions," Mike Fisher, Motto, Kryla & Fisher, St. Helena, CA. "Influence of vine spacing on fruit characteristics," Nick Dokoozlian, Viticulture/Enology, Kearney Agricultural Station, CA. "Vine spacing effects on root development and water utilization," Eben Archer, Viticulture & Oenology, Stellenbosch University, South Africa. "Influence of vine spacing on Pinot Noir, Sonoma Coast," Greg Lafollette, Flowers Winery, Cazadero, CA. "Soil considerations on vine spacing," Daniel Roberts, Kendall-Jackson. "Influence of vine spacing on Cabernet Sauvignon," Rich Arnold, Robert Mondavi Winery, Oakville, CA. "Influence of in-row spacing on Merlot in Carneros," Martin Mochizuki, Walsh Vineyard Management, Napa, CA. "Influence of vine spacing on Barbera in Central Valley, California," E&J Gallo Winery. "Equipment: Over-the-row compared to in-the-row choices," Rex Geitner, Spring Mountain Winery, St. Helena, CA.
Inquiries to: ASEV, PO Box 1855, Davis, CA 95617; tel: 530/753-3142.

50th Annual Meeting of AMERICAN SOCIETY FOR ENOLOGY & VITICULTURE
Wednesday-Thursday, June 30-July 1

Location: Reno Hilton, Reno, NV.
Inquiries to: ASEV, tel: 530/753-3142; fax: 530/753-3318; email: society@asev.org.

5th International Symposium on COOL CLIMATE VITICULTURE & ENOLOGY
January 16-20, 2000

Location: Melbourne, Australia

This will be first time the International Symposium on Cool Climate Viticulture & Enology will be held in Australia. The Melbourne Symposium is being jointly organized by the Victorian Wine Industry Association, and Australian Society of Viticulture & Oenology, with assistance of the New Zealand Society of Viticulture & Oenology.

Many pre- and post-Symposium tours of the cool climate production zones of Victoria, New South Wales, South Australia, Western Australia, Tasmania, and New Zealand are planned on the eve of Vintage 2000.

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1999 Sonoma County Showcase REPLACES Sonoma County Auction

by Millie Howie

"I really don't like playing second fiddle," admits Tom Hobart, senior vice president/general manager of Clos du Bois (Geyserville, CA) and chairman, of the 1999 Sonoma County Showcase of Wine & Food, transformed from the previous Sonoma County Showcase & Auction.

"Let's face it," he continues, "The Sonoma County wine auction has always been compared to the Napa Valley Wine Auction, with most of the publicity pointing up the disparity between what our auction generates and the millions of dollars generated in Napa. We were long past the time to make a factual evaluation of the benefits of an event which was becoming more expensive to produce every year."

Over the years there had been talk and some desultory efforts to abandon the live auction portion of the four-day event. In 1996, the talk got louder. Following that year's auction, Brice Jones, then owner of Sonoma-Cutrer Vineyards, called a meeting of Sonoma County Wineries Association (SCWA) members and asked, "Why are we doing this? Is it our goal to raise money to benefit charities, or is it a marketing and public relations event?"

Hobart believed the event had to change. It was time to remind the world that Sonoma County has long been recognized as the food capital of California, and that Sonoma County produces twice as much high-quality wine as France exports to the US.

Though there was still considerable resistance to dropping the auction, the winds of change had begun to blow. In 1997, the SWCA, showcase sponsor, signed a five-year contract with the San Francisco Symphony Orchestra to perform at the grand finale of the showcase. Simultaneously, the move was made to stage the Barrel Auction electronically, with bidders at dinners in four appellation regions.

"The press results were pretty much the same. The newspapers again reported how much money we didn't raise," says Hobart. The following year, a few additional tweaks were given to the format, with the same lack of press interest. Adding to that disappointment was a sweltering July day, which drove bidders out of the auction tent.

"This strengthened our resolve to redesign the event and build on the pluses which set Sonoma County apart from other wine regions," Hobart states. "The day after the 1998 auction, a group of us began lobbying for a drastic restructuring, replacing the auction with an afternoon of festive tasting of Sonoma County's foods and wines.

"The barrel auction, in its electronic format with sophisticated hardware from Hewlett-Packard, will be retained, and more lunches and dinners at member wineries will be offered. Our guests have always indicated that these friendly, on-site visits were a major factor in their decision to attend the showcase."

Frank Spinarski, director of market development for Gallo of Sonoma (Healdsburg, CA), immediately recognized the value of teaming up with "Share Our Strength" (S.O.S.), a national non-profit organization dedicated to alleviating hunger throughout the country. Spinarski, who had worked with S.O.S. previously in his post at Gallo, heads the chef committee and has pulled together a contingent of celebrity chefs from four-star restaurants across the nation. They will be exhibiting their talents at lunches and dinners at individual wineries Thursday and Friday, as well as taking part in the Saturday "Tastes of Sonoma County."

John Ash, author and food consultant, and Michael Hirschberg, Mistral Restaurant (Santa Rosa, CA), coordinated sign-ups of Sonoma County's own star chefs. Betsy Timm, executive director of Select Sonoma, arranged participation by the county's food producers.

New press emphasis

In October 1998 when George Rose joined Clos du Bois public relations, Hobart talked his new employee into attending a showcase planning meeting. "I wasn't there 10 minutes before I was informed I was chairman of the promotion and publicity committee," recalls Rose. "I jumped at the opportunity to get involved. It was a new experience for SCWA because typically, the PR committee had been responsible only for outreach to visiting media, finding lodging, and answering questions. It had never become actively involved with promotion of the event. What was brought out at that meeting was that the showcase should utilize my past experience in publicizing major wine events in Mendocino County.

"I believe that you can have the greatest event in the world, but if you don't tell anyone about it, you're not going to sell 1,000 tickets, which is the goal of the showcase."

Rose integrated the existing SCWA press list with names he has been collecting over the years. "I had always talked to food editors in my previous position," he says, "so I had a running start. We set up a target list of 100 respected writers in the food and wine fields, who we wanted to attract and sent out an announcement early in February to get our dates, July 14 to 17, on their calendars."

Almost immediately Rose started receiving responses. "Foodies across the country are very excited about the changes," he exults. "Coverage of the event should be enormous. If you look at the epicurean magazines alone, the number is huge. Then add in wine and general audience publications, along with radio and TV, and the potential audience is even greater. I can see no reason why CNN would not cover the event, and we've already had an expression of interest from National Public Radio."

New coordinator

When Mary Dee Morrison, SCWA's new special events producer, arrived December 1, her first task was to prepare a time table and set all the elements of each day's activities into place. Kim Blinoff, Santa Rosa artist, created a stylized portrait of a musical Bacchus to personify the spirit of the showcase, selecting green and gold as the color theme. Save the Date cards and registration materials were prepared by *Sonoma West* food and wine columnist Larry McDonald, who has also written the catalog and put together the annual recipe book.

By mid-March, attendee lists from SCWA and individual consumer lists from wineries had been merged, and 40,000 Save the Date cards were mailed. Registration packets followed one month later.

"To stage an event of this magnitude," comments Morrison, "calls for a major expenditure in time, volunteer effort, and money. Great support has been given by all of our members, right from the beginning. At our planning meetings, it was common to have 30 principals in attendance, offering input.

"The wineries have really been very outgoing, offering sponsorship and guest lodging for visiting chefs and press. The generosity of Saralee McClelland Kunde, Kendall-Jackson, Clos du Bois, Buena Vista, and Sonoma-Cutrer in providing their facilities as the venues for the largest gatherings has been immeasurable."

Events schedule

Early arriving guests will be hosted at a Sonoma-style warm welcome party at the Kendall-Jackson facility in Windsor, Wednesday evening. Thursday's tours and tastings throughout the four major appellation areas of the county will provide an overall view of the diversity of the agricultural attractions, and the first taste of that bounty at vineyard lunches in vineyard settings.

Thursday's dinners will be prepared by celebrity chefs and hosted by the owners and winemakers at a choice of a dozen different wineries. An optional activity that day will be the Annual Vintners and Visitors Golf Tournament at Fountaingrove Golf Country Club.

The emphasis on superb dining continues Friday with a choice of lunch with the owners at two dozen winery sites and the Bacchus Barrel and Colossal Collections Auction at Buena Vista Carneros and Clos du Bois Winery, which will be linked electronically.

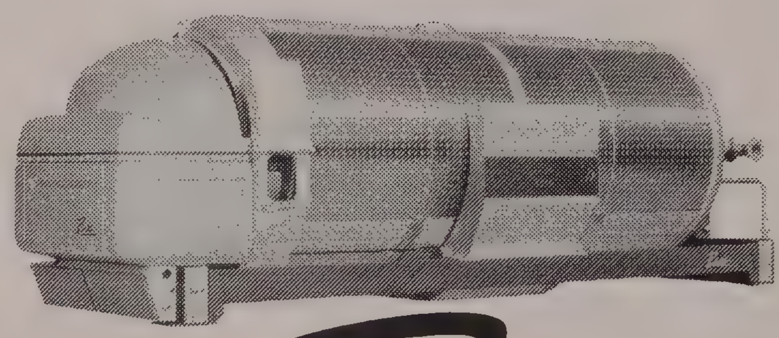
On Saturday the major happening, Tastes of Sonoma County, will take place in Richard's Grove (Windsor). In the idyllic setting under giant redwoods, 60 wine tasting booths and 30 gourmet grazing stations will share space with a silent auction, a fine arts show, and a series of culinary and lifestyle seminars. The gala comes to a rousing conclusion with a concert at Sonoma-Cutrer under the stars by the San Francisco Symphony, under the baton of Jeffrey Kahane, concert pianist and conductor of the Santa Rosa Symphony, followed by fireworks and dancing.

Co-sponsors named

Additional support for the showcase has come from *Food and Wine* magazine, Villeroy & Boch, and Jaguar motor cars. *Food and Wine* has set aside generous space for both pre- and post-event coverage.

Conclusion

"I'm really optimistic," Hobart says. "Although I don't think we have turned the corner quite yet, I do think this will be a pivotal year, setting the direction the showcase will follow. There truly is nothing like it, nor in my opinion, could there be, given the bountiful food sources of Sonoma County and the quality of its wines. Did I tell you that Sonoma County produces twice the amount of high-quality wine that is imported from France?" ■



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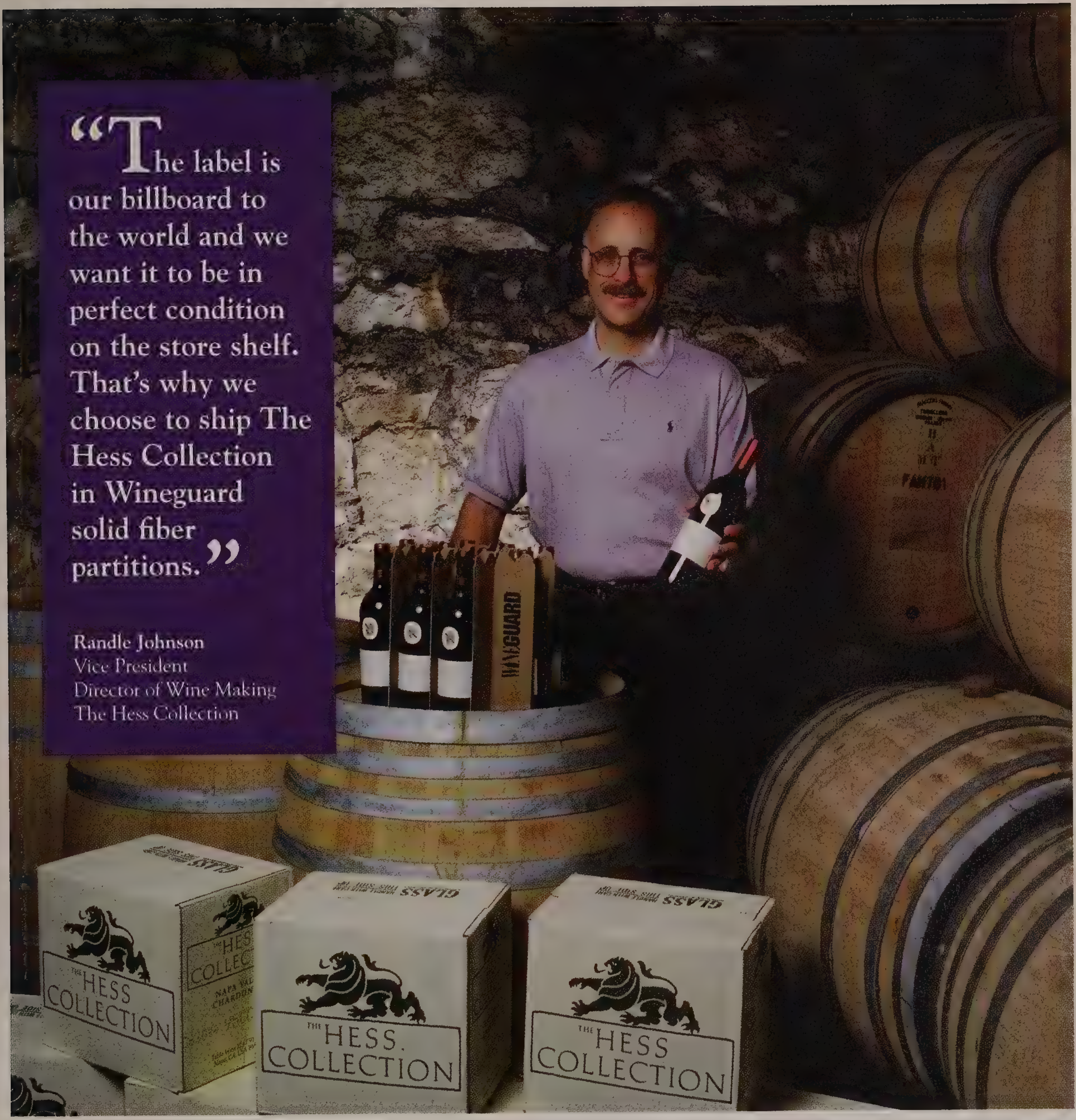

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Viognier

STYLISH RHONE SINKS ROOTS IN CALIFORNIA

by Eleanor & Ray Heald

Stylish association with France's Rhone Valley may have been the early 1990s reason to give Viognier a home in the U.S. Today, its a lot more than that.

Once a bourgeois crop grown south of Lyons in agrarian France, Viognier became the fashionable white on the low-fertility terraces of three northern Rhone appellations Condrieu, Chateau Grillet, and Côte Rôtie. In the latter, it is allowed by law as a blending varietal (up to 20%) with Syrah.

Viognier has been cast by some as an Alternative Beyond Chardonnay — engaging, but it does not carry the serious intent of many of today's Viognier producers.

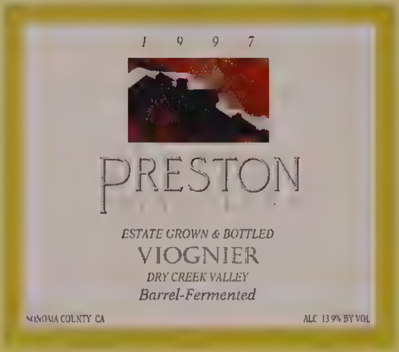
To these producers, Viognier stands alone, not needing association with another white varietal. Over the last few years, they've learned its vineyard growth habits, best sites, flavors at maturity, regional characteristics, and the best cellar techniques to preserve them.

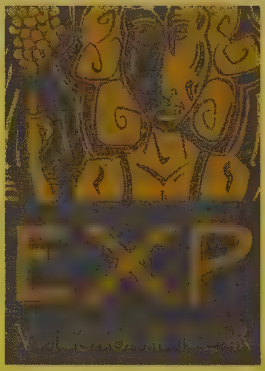
Winemakers express their concerns about raising Viognier awareness and discuss the fine points of growing the grape and making the wine in California in this *PWV* exclusive varietal review.

Regional characteristics

These winemakers agree that Viognier tends to develop some regional characteristics, but its main aromatic component, regardless of region, is honeysuckle.

When describing Amador County fruit, Paul Sobon (Sobon Estate) adds exotic tropical aromas in the melon and honey spectrum, but not pineapple. He notes that





PARTICIPATING PRODUCERS:

BELINDA GOULD, winemaker
Calera Wine Co., Hollister, CA

DWAYNE HELMUTH, winemaker
Callaway Winery, Temecula, CA

KRIS CURRAN, assistant winemaker
Cambria Winery & Vineyard, Santa Maria, CA

DAVID MUNKSGARD, winemaker
Iron Horse Vineyards, Sebastopol, CA

DAVID NOYES, winemaker
Kunde Estate Winery, Kenwood, CA

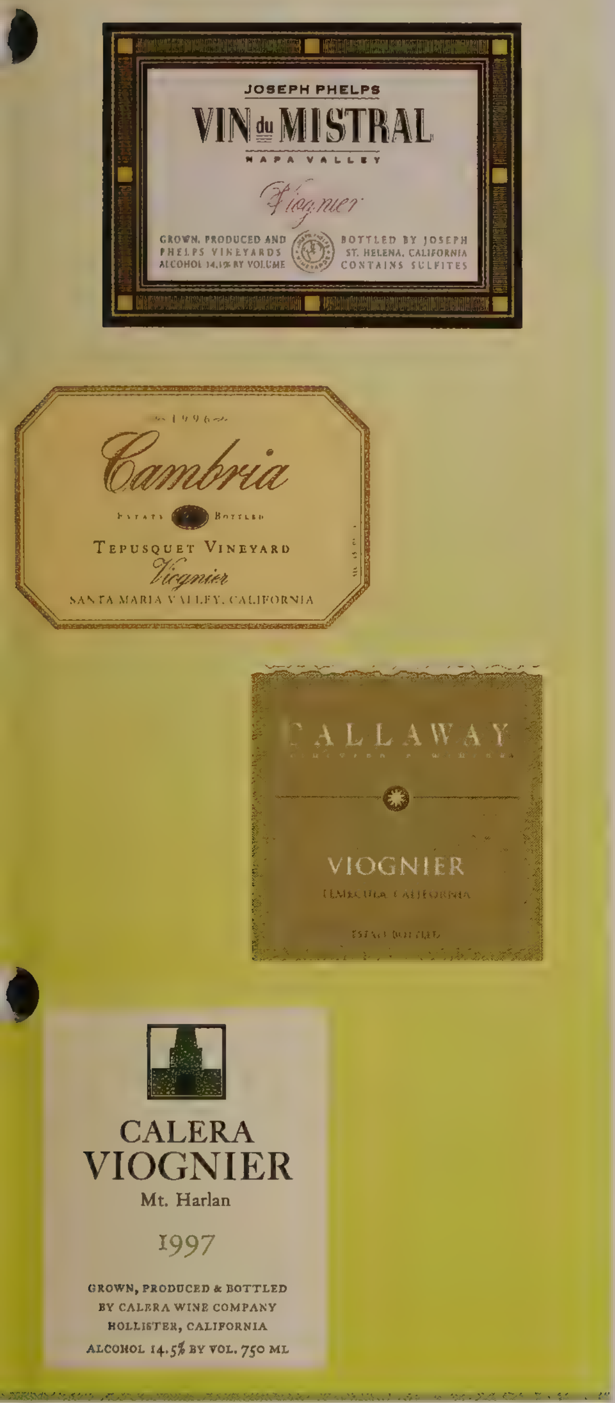
SARAH GOTT, assistant winemaker
Joseph Phelps Vineyard, St. Helena, CA

BARRY BERGMAN, winemaker
R.H. Phillips Vineyard, Esparto, CA

KEVIN HAMEL, winemaker
Preston Vineyards, Healdsburg, CA

JOHN MACCREADY, owner/winemaker
Sierra Vista Winery, Placerville, CA

PAUL SOBON, winemaker
Sobon Estate, Plymouth, CA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early Sobon bottlings (1993) were leaner with grapefruit elements, but as the vines have matured, the wine is now bigger and richer, developing vanilla and butterscotch tones.

Kris Curran (Cambria) concurs with the tropical fruit descriptor and adds Hawaiian flowers, peach, and nectarine to describe fruit from the Santa Barbara area.

Sarah Gott notes that the Joseph Phelps Viognier parcels in the Napa Valley stretch from the home ranch in St. Helena to Carneros in the south. Viognier from warmer St. Helena has reduced aromas, but this wine's mouthfeel and flavors are bigger and, at the riper end of the spectrum, include honeydew, ripe peach, and nectarine. From cooler Carneros, aroma is delicate, prettier, with gentle spice and a crisper finish. She finds the overall wine has better balance using fruit grown in both warm and cool areas.

Preston grows Viognier in the warm part of Sonoma County's Dry Creek Valley. In sandy soil in very warm years, it ripens by the end of August. Winemaker Kevin Hamel reports that, in general Viognier is picked in early September, but he's learned that fruit must hang as long as possible to develop intense flavors. Hamel describes the aromas of Preston Viognier as floral, peachy, and apricot at the extreme ripe end. In years when fruit doesn't get as ripe, there are ginger notes.

Belinda Gould says that Calera's vineyards in Hollister, CA, are at an elevation of 2,200 feet, where generally, Viognier is picked very ripe in mid-October. In addition to honeysuckle, aromas are tropical-floral.

From the Temecula region, Dwayne Helmuth (Callaway) points to floral aromas of jasmine, honeysuckle, and orange blossom.

In John MacCready's Sierra foothills vineyards (Sierra Vista), Syrah is picked before Viognier, which needs hangtime to develop peach orchard aromas and peach and apricot flavors.

In addition to tropical fruit elements, Barry Bergman suggests R.H. Phillips shows mango and key lime. In some cooler years, more stonefruit aromas, such as peach and apricot, develop.

Dave Munksgard maintains that, vintage to vintage, Iron Horse Vineyards Viognier is consistent, with floral, peachy, and honey tones.

"Viognier from Kunde Estate vineyards in mid-Sonoma Valley also shows fruit flavors of pear in addition to peach and honeysuckle, and a distinct white pepper spice," says winemaker David Noyes.

Best sites and clone selection

Though she likes the benefits of blending Viognier sourced from both warm and cool sites, Gott admits she personally prefers the character provided by grapes from cool sites, Yountville to Carneros in the Napa Valley, in particular.

Calera sources from one site, but it is sloped terrain with less topsoil at the top of the vineyard than the bottom, which provides some variation. Viognier's inherent vigor is controlled by shallow soils. Gould believes that site selection, choosing shallow, free draining, almost infertile soils is a good devigorating tool for Viognier.

At Kunde, the three Viognier blocks with alluvial soils are fairly similar. "We've harvested as early as mid-September and as late as early November," says Noyes, "but usually around early October. When the fruit can ripen more slowly at cooler temperatures, we can get the flavors we like at lower sugars, a definite advantage."

Two clones, UCD and a La Jota selection are planted at Sierra Vista. MacCready reports that he sees little difference between them. Noyes also has UCD and a direct import from France, which has a smaller cluster.

At Preston, UCD is the production clone. Hamel has had experience with a very small planting of an import from a certified French nursery. That clone is described as a lower producer in France, but planted on a clay bench soil in California, it's much more productive than the Davis clone.

Growing Viognier

Training and trellising Viognier have proved challenging at Calera. When the vines were first planted in 1983, they were cordon-trained and not particularly fruitful. In 1989, the vines were changed to cane, but while the production increased, so did the cluster size. After eight years, cordons are being re-established for smaller bunches and smaller berries.

Callaway's first Viognier vines (1992) were grafted on quadrilateral cordons, but have now been planted to bilateral cordon with vertical shoot positioning (VSP) to better balance vine production.

Viognier's biggest growing challenge according to Helmuth is that every bud puts out primary, secondary, and sometimes tertiary canes and all buds are fruitful at about the same time. This requires vineyard workers to go through and remove two of the weakest shoots at each node, so grapes ripen evenly to maturity.

All winemakers agree, Viognier requires major shoot thinning.

"Without shoot thinning, we'd get 10 to 12 tons per acre (TPA)," Helmuth explains. "When I hear low production levels without significant management

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quoted, I don't understand it from the perspective of Callaway's Viognier vineyards. Both shoot and cluster thinning are absolutely necessary along with dropping fruit pre-veraison. At least it has been to this point in our own vineyards."

At Sobon, vines are on quadrilateral cordon with the same problem Callaway experiences. "We crop thin three times during the growing season," Sobon reports. "Major shoot thinning is done early in the growing season. On quadrilateral cordon, vines are pruned to three to four spurs per position, leaving between 12 and 20 spurs per vine.

"This is later reduced to two positions per spur; then another pass is made to assess cane length and the number of bunches on each cane. An average cane length of 18 inches holds fruit well. If the length is only 10 to 12 inches, fruit is dropped from that cane.

"On GDC, an additional labor challenge is clearing the middle of the canopy to achieve maximum sun exposure. Fruit not in the sun has the same problem as Zinfandel — uneven ripeness on bunches. Viognier berries from fruit without sun exposure taste exactly like Sauvignon Blanc with grapefruit elements. Green bunches need to be removed, then with a 3 to 3.5 TPA crop potential and harvesting between 23.5° and 24° Brix, uneven ripening becomes nearly a non-issue."

All Joseph Phelps Viognier vineyards are vertically trellised, but vines are on a mixture of rootstocks. They are farmed the same and yield on average about 3 TPA.

At Cambria, yields are represented in pounds per vine and that ideally is eight to 10. "But on a vertical trellis, Viognier likes to push a lot more than that, and we cannot cane prune," Curran contends.

Water management

At Cambria, picking occurs at about 24.5° Brix. After that peak, grapes begin to shrivel quickly, even with available ground water. Irrigation is utilized to extend the growing season and hang-time. Without it, Viognier berries begin dehydrating around 21° Brix, before full ripening occurs.

Munksgard adds that the berries take on a rubbery character and become difficult to press. There's also a thinning of the cluster stem, but left hanging, Viognier eventually develops flavors, albeit at high sugars.

"It's probably sacrilegious to recommend more water," MacCready says. "But in the northern Rhone, it rains two to three inches per month during the growing season." To emulate those conditions, MacCready irrigates right up to harvest with 24 gallons per vine three times per month.

In the warm growing conditions of R.H. Phillips, Bergman has learned that water is an essential through harvest, otherwise sugar accumulations outpace all other physiological maturity issues. "We've learned not to be afraid of water up to and through harvest," he contends.

Acidity differences

Hamel notes that when Viognier is picked at over 24° Brix, for full flavor development, pH is the lone out-of-whack parameter. It could be 3.5 to 3.6 with a TA a little above 6g/L. Uncomfortable with the high pH, Hamel does moderate juice acidulation with tartaric acid.

"The pH is the most important parameter at Callaway, and if it needs to be reduced, we don't hesitate to acidulate," Helmuth says.

"Oiliness or viscosity is an important characteristic for Kunde Estate," notes Noyes. "Too much acidulation can affect this. We usually end up with a TA around 5.0 g/L and a pH between 3.35 and 3.6."

But for Munksgard, the problem is reversed. In the 1997 harvest, pH was below 3.3. Curran concurs and says, "We never add acid."

Bergman is in the low acid camp. "By the time juice is in the tank, we'll have TAs below 0.5 and pH pushing 4.0," he says. "To correct, we add tartaric acid at 3 to 4 g/L to the juice. The finished wine has TA around 0.62 and pH about 3.4.

What causes these wide acid swings? "The differences are more climate than soil related," Curran answers.

Bitterness and high alcohol

Viognier skins are very thick and also very bitter, with a tendency toward high solids. Munksgard maintains that the only way to handle these drawbacks is with whole-cluster pressing. The other winemakers agree.

"Because of the very rubbery skins that you quite often get with Viognier," explains Munskgard, "we have found that even with whole cluster pressing (grapes still on the stems), we have chosen to use rice hulls as a pressing aid. If we don't use rice hulls, our press cycle is about twice as long. We need to do more rotations, and our solids levels start to rise considerably. The bottom line of all this is rising pH levels, along with more astringency."

To press Viognier gently, Munksgard has the luxury of a Champagne press at Iron Horse. Other producers have the use of gentle presses, but Hamel, who does not have the facility to whole-cluster press, destems without crushing and goes directly to press.

Bergman resorted to fining to reduce the level of bitterness and astringency, until 1997, when the winery went to whole-cluster pressing and now uses no fining agents.

"Overt bitterness in the wine is also related to temperature at time of pressing," Helmuth points out. "This is why we night harvest." R.H. Phillips also harvests at night, while other producers are attentive to morning picking.

To handle high alcohol, Helmuth blends with other varietals. Depending on the vintage, he uses 3% to 8% Pinot Blanc to lower alcohol to 14% and has also used 1% to 2% Muscat Canelli. At this low percentage, Muscat does not significantly affect aromas, but does help reduce alcohol.

Helmuth notes that some consumers have dubbed Viognier as "sweet." He believes that the heightened honeysuckle and tropical fruit aromatics set the brain up for a sweet connection. Add high alcohol to that and there are bound to be "sweet" comments even if the wine is essentially dry.

Winemakers agree that for Viognier to have flavor, it comes with the downside of high alcohol. But if cellar regimes target production of a balanced wine, higher alcohol is nearly a non-issue.

Fermentation and barrel regimes

At Sobon, juice is pressed to tank and settled for 48 hours. Clean juice is drawn off and transferred to older, neutral American and French oak barrels for fermentation. The remainder is cold-fermented (55°F to 60°F) in tank. Lees are not stirred in either fermentation vessel. Sobon does not inoculate for malolactic fermentation (MLF), but he doesn't worry about the occasional barrel in which it occurs.

At Callaway, all juice is cold fermented in tank to preserve bright aromas. "I do everything I can to keep Viognier from being compared to Chardonnay and to enhance Gewurztraminer-like characters," Helmuth contends. "While I do use some Prise de Mousse (PDM) yeast, I add 71-B to bring out terpenes. I want to knock consumers' socks off with the aroma."

At Calera, neutral French oak barrels are used for lees contact. The fermentation is uninoculated and even with final alcohol over 14%, stuck fermentations have rarely been a problem. The wine is stirred until MLF is completed.

Curran says the Cambria philosophy is similar. "Viognier must express its personality and not just be an alternative to Chardonnay — we don't want it to have any association with Chardonnay. New oak easily overpowers the great aromas of Viognier, and we dislike MLF character in this wine. We consider neutral French oak the best fermentor for Viognier. We use PDM because we want the wine to go dry, and Viognier does have stuck fermentations with Epernay."

MacCready generally ferments in stainless, but when complete, wine is transferred to neutral oak and remains there until August following harvest. In 1997, he used two new French oak barrels for fermentation and bottled this 10% in February with the balance of the blend as tank-fermented wine. He found that the wine was more complex when fermented in stainless steel, so in 1998, MacCready returned to that method. However, he plans to bottle in May because he now feels that Viognier needs more development time on the lees whether in tank or barrel. "In the 1998 harvest, I needed the tank which I was saving for Viognier, so the Viognier juice went into old French oak barrels where it sat on the lees and was stirred for complexity. Sometimes preferences are not as important as logistics."

"I'm a believer in bentonite fining of the juice, as a solids-reducing, pre-fermentation settling aid," says Munksgard. "I believe that with Viognier, it's probably that much more important to get your solids down before fermentation to avoid extraction of bitter components from those solids.

Noyes begins fermentation in tank to avoid barrel fermentation that is too warm and to preserve fruit aromatics. "However, we finish in barrel to allow the phenolics to soften and give length to the wine's finish," explains Noyes. "We include 20% one-year-old French oak barrels. Some oak sweetness can moderate a tendency towards bitterness, but won't overwhelm the fruit. A little oak flavor also provides a recognizable element for a public weaned on Chardonnay."

Bergman has experimented with neutral puncheon fermentation, likes the potential, and will increase the percentage over the next few years. Presently, R.H. Phillips Viognier is half neutral French oak barrel fermented and half tank. "Part of the problem is that consumers don't take a fruity wine seriously," Bergman comments. "For our fruit, fermentation in second and third fill French oak barrels seems to tone the fruit down just enough and gives it a framework supporting the fruit."

O_2 management

At Iron Horse, Viognier is 100% barrel fermented in three- and four-year-old French cooperage. Lees are stirred every other week early on, then monthly thereafter, but the wine does not undergo MLF.

"From an O_2 standpoint, I feel quite comfortable with that. Viognier has an amazing ability to scavenge O_2. Compared to procedures used for any other white wine, Viognier just grabs O_2. I think that possibly this is what is giving Viognier the bad rap with respect to its ageability. Among some consumers, a wine destined for early drinking is not taken seriously."

To guard against O_2 uptake coming out of barrel, Munksgard uses an argon gas system (Bulldog Pup). The wine goes into argon-sparged tanks, and any transfer thereafter is under argon gas atmosphere with an O_2 meter (selective electrode) in hand.

"But there's a happy medium," he says. "If you're too cautious, you blow the varietal character right out the top of the tank. When we bottle, we do it slowly (under 30 bpm), allowing more time for the empty bottles to go through the Orbit N_2 sparger and O_2 monitor again. I don't want wine to go into bottle with heavy doses of SO_2 to bind up the O_2.

"If anything, Iron Horse is going to get the complaint that, early on, our Viognier is a little tight, but I'll opt for that rather than being concerned about the wine if it's in the market for a while. If Viognier falls apart in the bottle prematurely, no amount of marketing will get people to like it."

Bottling schedule

Viognier is touted as an aromatic variety, like Riesling or Gewurztraminer, but isn't bottled early in November or December post harvest as

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these varietals might be. Why not?

"There's a balance to be achieved," Gott answers. "The wine needs to develop backbone and mouthfeel. The 1993 Joseph Phelps Viognier was bottled in February or March following harvest. We know today, that if we wait longer to bottle, we witness the wine's development."

Noyes confirms this. "We've bottled in February and March out of a concern about oxidation, but based on how some of our older vintages have developed, I'm now more willing to bottle in April or even later if the wine can handle the time in barrel. Once again, it's a question of allowing the wine's phenolics to soften and develop a long, smooth finish."

"Fruitfulness and some exotic aromatics are captured early along with crisp, clean notes, but there's so much more that develops with neutral barrel ageing," says Gott. "These elements are needed to balance the wine. In this way, Viognier is very different from Gewurztraminer.

"After eight months in the bottle, the wine starts to show even better. That's why we bottle in June and don't release until December. If O_2 is controlled, as has been suggested, you will see this kind of development with Viognier."

MacCready contends that Viognier holds its fruit aromatics longer than Riesling or Gewurztraminer or even Sauvignon Blanc.

Munksgard underscores the importance of developing mouthfeel. "We were getting hammered with 1996 Iron Horse Viognier because it was too Riesling-like. In hindsight, we rushed that wine into bottle. In 1997, we left the wine in neutral barrels several months longer, stirred the lees more, and created a wine with a lot more mouthfeel. This is essential to keep from having a Riesling-like, high alcohol wine."

Richness, lushness, and mouthfeel can be great selling points for Viognier because as Munksgard points out, "Viognier can be an enormously confusing variety to many consumers. Taken on aromatics alone, the consumer does not know if the wine is going to be sweet or dry."

Munksgard is also concerned about the dissolved CO_2 level at bottling. He likes to keep it low and stresses the importance of monitoring O_2 once again, because with low CO_2 levels, the wine loses its protection.

By way of comparison Munksgard bottles Chardonnay with 300 to 400ppm CO_2, but with Viognier he keeps it considerably lower, never greater than 200 ppm. In 1997, the CO_2 was barely measurable in Iron Horse Viognier.

Gott cites CO_2 levels in the higher hundreds. Noyes notes 800ppm, about the same as Chardonnay. "With high pH, we need some liveliness from CO_2 for balance."

Fining and filtration

Several winemakers believe that they'd be taking a big risk without sterile filtration. Unless the regime is 100% MLF, they won't bottle without

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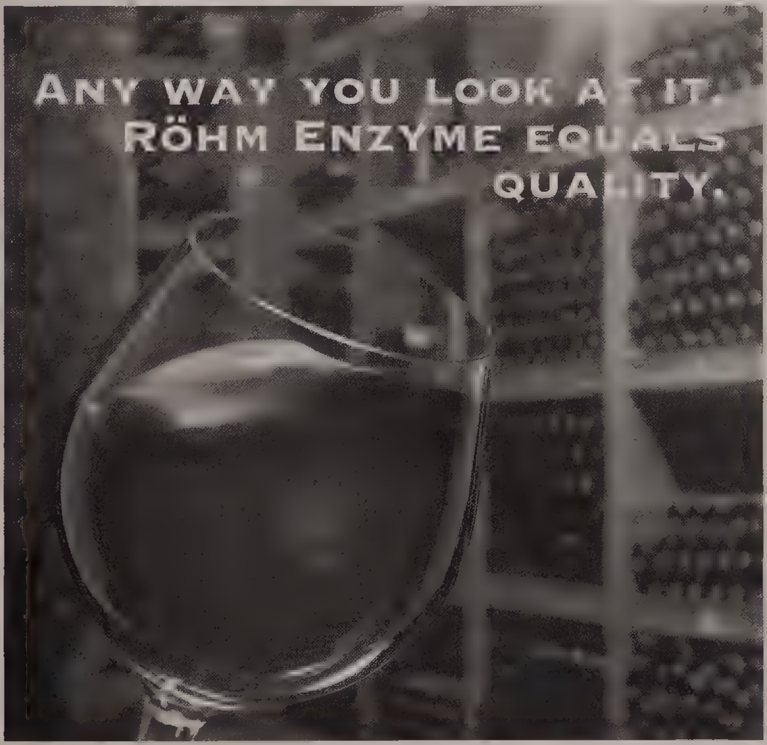

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sterile filtration.

Since the Joseph Phelps style of Viognier is partial MLF, sterile filtration is deemed necessary.

Calera Viognier is 100% MLF, and the wine is not sterile filtered. MacCready inoculates for MLF, but sterile filters.

Iron Horse Viognier is zero MLF. Munksgard does a white DE filtration and puts the wine through K-200 pads after cold stabilization with K-200 pads before the bottling line.

Marketing

"There's a lot of Viognier being planted and a lot going into the marketplace without significant supportive marketing," Munksgard contends.

Bergman is also realistic on this point. From the 1997 vintage, R.H. Phillips produced 12,000 cases. "We're moderately nervous about our ability to sell that much in 12 months. Three years ago, only 20,000 cases were produced in the whole country."

Over-planting concerns some winemakers. Iron Horse increased production from 1996 to 1997, but it only bottles 10% as much as R.H. Phillips.

"Viognier is not flying out the door," Munksgard admits. "If the planting trend continues, we must educate consumers about the variety. So many have not even heard of it or don't know how to pronounce it. Because they can't pronounce it, they are reluctant to try it. If we get them to try it at a consumer tasting, 80% love it and go out and tell their friends who come back asking for the V wine or Vogner."

MacCready, however, notices that over the last year, more tasting room visitors request the wine and pronounce it correctly. "It takes time," MacCready reassures. "When we opened 20 years ago, we had one visitor per weekend, and now we sell 40% of our wine out of the tasting room. It takes a long time for something new in the wine industry to come around to be accepted by consumers."

Hamel is less apprehensive about significantly more Viognier being planted. He thinks consumer's unfamiliarity is due to limited production. "As wineries produce more, especially those with larger marketing and advertising budgets, it will become better known. It's called exposure. Seriously, if consumers learned to pronounce Cabernet Sauvignon and Pinot Noir, they can learn Viognier if they hear it often enough. There has to be a certain critical mass before consumers start to pay attention."

Munksgard counters, "My single, gravest concern, however, is that a consumer's first taste may be an old Viognier. The reaction is likely to be, 'There's no fun in this wine.'"

Sobon remains upbeat and says, "We had the same problem with Zinfandel 10 years ago. It was in short supply. It's the same with Syrah, now. The more Viognier producers out there, the merrier. As soon as a large producer gets Viognier into more markets, it will become legitimate in the mind of consumers." ■

PWV thanks Joseph Phelps Vineyards for hosting the discussion/tasting.

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TWELVE WAYS TO TURN OFF PART-TIME WORKERS

by Phillip M. Perry

Motivating full-time employees is hard enough. But motivating part-time and temporary workers poses a special challenge. How do you kindle enthusiasm in people who are often saddled with low level work, blocked from climbing the corporate ladder, and treated like “outsiders” by the full-time staff?

Since slimmer profit margins force more wineries and vineyards to maintain smaller payrolls by hiring part-time employees for busy hours and temporary workers for peak seasons, answering that question has become critical. Such “contingency workers” now account for 20% of America’s work force, according to the Chicago consulting firm of Towers Perrin. That number’s expected to increase to 30% within a decade.

“Part-time and temporary employees have become vital tools for keeping labor costs under control,” says Carl Johnson, president of Princeton Employee Relations, Princeton, NJ.

Unmotivated contingency workers are dangerous. Feeling demoralized, they perform in a listless manner and neglect customers. That threatens your profits.

Worse, disenchanted part-time workers are apt to quit for greener pastures. That saddles your business with the costly task of training replacements.

Here’s some good news. You *can* motivate these employees. The secret? Avoid making common errors that are proven “turn offs” for part-time and temporary workers.

Here are the most common errors to avoid, according to leading management consultants:

1. Giving them the cold shoulder.

Avoid the common mistake of parking new contingency workers at a desk with a vague promise to “get back to them later.” Give them a warm welcome when they arrive for work and introduce them to the staff.

“It’s easy for temporary workers to feel they are not wanted or needed or loved, so they don’t fit in,” says John Fanning, president of Uniforce Staffing, New Hyde Park, NY. “Treat them as human beings, not as commodities.”

Bonus tip: *Avoid confusion and hurt feelings by clearly identifying the chain of command to the new employee. Who is authorized to give orders?*

2. Turning them loose without orientation.

New part-time workers can easily feel lost. They need to be oriented to the work place.

“On arrival, take 15 minutes to describe job duties exactly,” says Bruce Steinberg, spokesman for the National Association of Temporary & Staffing Services, Alexandria, VA. “Cover basic things: What are the policies in the firm? Can they use the phone for personal calls? What are the policies on overtime?

“Who should they call if the copy machine breaks down? Who is their relief if they have a position that needs to be covered at all times?”

Bonus tip: *Plan ahead. “Do things ahead of time,” says Steinberg. “Don’t just assume that when people show up, you will get everything ready. Prepare their work space with all the necessary tools.”*

3. Not assigning a mentor.

Even with a good orientation, a new worker may soon feel confused. Full-time staffers may be so busy that the new worker hesitates to approach them for advice.

Result: The worker is demoralized and operates at less than peak.

Solution: Assign a mentor to each contingency worker.

“A mentor is a tremendous motivational tool,” says Don Schackne, president of Personnel Management & Administration Associates, Delaware, OH. “Select someone who is willing to teach and is patient. You can also assign a few permanent people as roving mentors.”

Bonus tip: *The mentor will feel good about the added responsibility.*

4. Exerting too much control.

Managers tend to exert too much control over contingency workers. Maybe your winery/vineyard has done things one way for years. Does a better way exist? You’ll never find out if you don’t give the new worker the freedom to try. You can increase motivation substantially by allowing the employee to solve problems in creative ways.

“When contingency workers believe they are making a difference in an organization, they feel better about being there,” says Ian Jacobsen, president of Jacobsen Consulting Group, Sunnyvale, CA.

Bonus tip: *Encourage everyone to think creatively by recognizing new ideas publicly.*

5. Loading down the contingency employees with “grunt” tasks.

“Lots of times, part-timers are assigned the worst tasks that no one else wants to do,” says Ellen Wagner, president of Creative Solutions, Farmingdale, NJ. “That’s demoralizing.”

It’s tempting to assign all of the low-level work to the part time worker and let things go at that. After all, doesn’t that free up your permanent employees for more productive work? Yes, but it can also demoralize a contingency worker to the point of quitting.

Remember that everyone feels good about improving skills. What challenging tasks can you assign to the new employee(s)? To find out, ask them! What skills would they like to acquire? Perhaps they want to learn about your wines, improve their sales approaches to customers, or learn marketing techniques.

By encouraging new skills you help match the employee's personal goals with those of the winery/vineyard. This can foster the mutual loyalty that is a hallmark of good relationships with permanent employees, but which is often lacking with contingency workers.

There's nothing wrong with assigning these workers low-level tasks. Just make sure you *also* add some specialized skills to spark loyalty and enthusiasm.

Bonus tip: *Rotate the mundane tasks among all employees to keep boredom at a minimum.*

6. Assigning the worker only to small units of many projects.

It's tempting to assign a part-time worker to a wide range of projects. Watch out! That's a good way to lose the worker to another employer.

"The employee will feel better about being able to bring a project to completion," says Kenneth Misa, president of HR Consulting Group, Glendale, CA. "The work will be far more meaningful."

This doesn't mean that the worker cannot work on a series of unrelated projects. Just make sure that you ***also*** assign a complete project on a regular basis, so that the worker has a feeling of achievement.

Bonus tip: *Invite the contingency worker to suggest a project that will help the winery/vineyard, then allow that employee to complete the project.*

7. Overlooking work done well.

Managers who recognize the achievements of permanent employees will often neglect to congratulate contingent employees. That's devastating.

"Recognition of a job well done is even more important for contingent workers," says Dr. Peter Spevak, director of the Center for Applied Motivation, Rockville, MD. "Their own identity with a company is not as strong, and they need to be reinforced."

Employees are more likely to feel they are "just part-timers" if they are not given adequate praise for achievement. That leads to a lack of motivation.

Bonus tip: *Consider giving a plaque to the contingent "Worker of the Month" who has exhibited enterprise beyond the call of duty. Mount a series of photos of the winners on your employee bulletin board.*

8. Allowing conflicts with full-time employees.

Without proper communication, your permanent employees may feel threatened by contingent workers. Fearing for their own jobs, your employees may give part-time workers the cold shoulder or fail to cooperate with them.

Solution: Explain to current workers why you are bringing in outsiders.

"Bring your permanent employees together prior to the arrival of temporary and part-time people," suggests Burt Slatas, marketing director at Olsten Staffing Services, Melville, NY. "Explain that your winery/vineyard needs extra staff help to get the job

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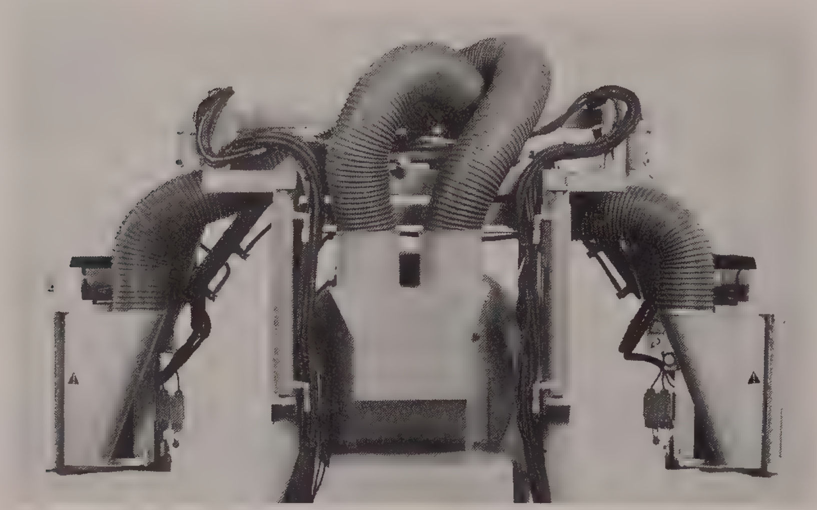

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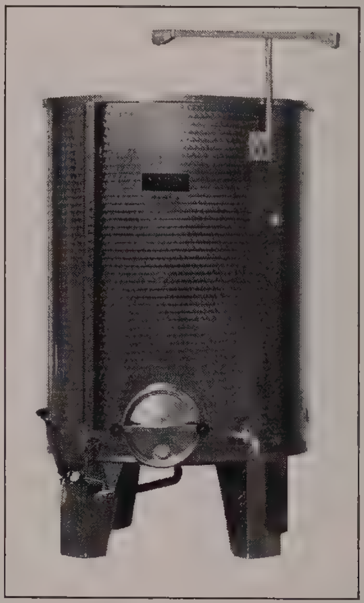

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HOW TO HIRE SMART

"When you make a mistake hiring a contingent employee, it haunts you for a long time," says Don Schackne, president of Personnel Management & Administration Associates, Delaware, OH. "Taking on the wrong person is a costly error, so how do you get rid of bad hires, and how do you replace them?"

Here's what to do before hiring:

•**Make sure you need a contingent worker.** Consider fully using your current staff by shifting work burdens around, or even eliminating some unnecessary tasks.

•**Allow plenty of time.** Don't hire in panic. Anticipate your work loads and start the hiring process far in advance of the time you need the worker.

•**Use all resources.** "Your best hires will come from referrals by current employees who know your business," says Roy Chitwood, president of Max Sachs International, Seattle, WA. "But you can also place classified ads and use temporary staffing firms, who make individuals available on a full and part-time basis."

•**Select a staffing firm carefully.** Does the staffing firm have a good compensation package, training, and selection process? If not, this can put a ceiling on the quality of the employee the firm refers. Does the firm have a specialty? Ask for endorsements from satisfied clients.

•**Use only one or two staffing firms.** They send their best workers to steady clients, and they get to know exactly what you need. Try to use the same part-time and temporary employees on a regular basis. They will get to know your business and perform better.

•**Define the position precisely.** "When dealing with a staffing service, the single biggest error is not defining the position carefully enough," says John Fanning, president of Uniforce Staffing, New Hyde Park, NY. "The service needs that information to select the right person."

•**Don't over-hire.** A skilled individual will not be motivated by grunt work. "List the specific skills you need before interviewing for an individual," suggests Burt Slatas, marketing director at Olsten Staffing Services, Melville, NY. This is true whether you place your own classified ad or go to a staffing service.

•**Interview the person yourself.** Whether you place your own classified ads or rely on a staffing firm, interview the potential hire yourself.

"You're looking for a self-starter," says Carl Johnson, president of Princeton Employee Relations, Princeton, NJ. "The best way to determine that is to inquire about projects they have done. What innovations did they perform? During the interview process you should ascertain what it is about the job that appeals to the individual." With that information you will know what buttons to push to motivate that contingency employee. ■

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done right. Communicate that the new people do not represent a threat to the jobs of the staff members."

Bonus tip: *Reward successful referrals with cash bonuses.*

9. Omitting contingent workers from business activities.

"Suppose you have a Saturday workshop on time management," suggests Misa. "Why not invite the contingent employees?" This will make them feel part of the team. You should also invite them to employee lunches, parties, and any other activities in which the staff participates.

Bonus tip: *Hold a party for every contingent worker's birthday.*

10. Overlooking financial incentives.

Traditionally, bonuses have been reserved for permanent staffers. Times are changing. Now, employers are setting up programs for contingent people to stimulate enthusiasm for performance.

"Develop some kind of a bonus plan based upon gross sales or upon some performance-based criterion," says Schackne.

"Consider providing benefits for contingent people," says Roy Chitwood, president of Max Sacks International, a consultancy in El Segundo, CA. "Typically, they are excluded from normal benefit packages. After a certain amount of time, offer insurance coverage or vacation time for number of hours of work put in."

Bonus tip: *Pay contingent workers a little more per hour than competing businesses. This will keep competitors from raiding your workers after you have invested in their training.*

11. Insisting on rigid hours.

A substantial portion of part-time and temporary employees are doing that form of work because they do not want to be tied down to nine-to-five hours. Some have children to care for and can have a problem finding sitters. Capitalize on that. If you allow for flexible hours you will encourage the employees to stay with your winery/vineyard.

Bonus tip: *Avoid panic situations by encouraging employees to let you know in advance of any anticipated scheduling conflicts.*

12. Not getting feedback after the job.

"At the conclusion of the assignment, give the contingent worker some opportunity to express feelings," suggests Misa. "Have a brain-storming session with all employees. What was done well? Poorly? The answers can provide guideposts for improving your future treatment of contingent workers — and increase the return you get for your investment in their labor."

"Get feedback, even if you do it formally with a checklist," adds Spevak "This lets the workers know that you are pleased to have them as part of your team. It's a reinforcement."

Bonus tip: *Offer a monthly award for the best tip on improving winery/vineyard operations.*

These tips should help you motivate contingent employees to work with more enthusiasm and help put your winery/vineyard ahead of the competition.

"We have had a perception in the past that part-time and temporary workers were disposable," says Marc Silbert, spokesperson of Robert Half International, Menlo Park, CA. "They came, performed menial functions, and left with little interaction. Now, contingent workers serve virtually all aspects of the workplace. They should be recognized as the professionals they are." ■

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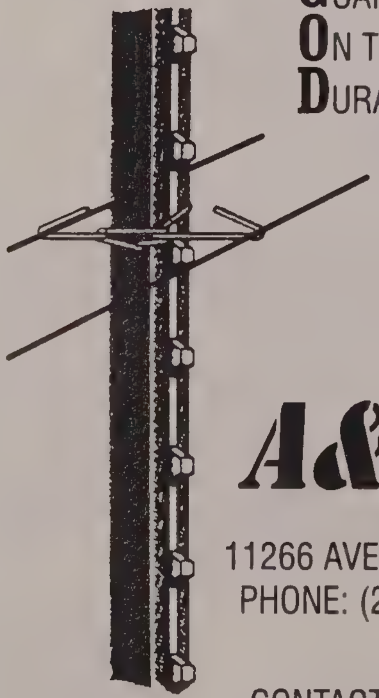

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BEVERAGE WINE

Demystifying wine for the mass market

by Mary Ewing-Mulligan MW

Wine is really two products and the only way to make wine appeal to the mass market is for the wine industry to acknowledge that and to promote wine as such, declares author and Master of Wine Mary Ewing-Mulligan.

This article is excerpted from a speech she delivered at the Women for WineSense National Convention in May 1998. Ewing-Mulligan is director of International Wine Center in New York, and co-author of Wine for Dummies *and three other …*For Dummies *wine books.*

When IDG Books Worldwide asked Ed McCarthy and me to write a wine book in their tremendously successful…*For Dummies* series, we were elated.

We knew that a book like *Wine For Dummies* could reach thousands of emerging wine drinkers who would never otherwise pick up a magazine or book about wine. We knew that our passion and expertise, combined with the … *For Dummies* humor and lightness, would be just the ticket to earn new fans for wine all over the U.S. (340,000 copies later, we know that our hunch was correct!).

But we found that, as serious wine lovers and collectors, we had to adjust our attitudes to wine somewhat in order to communicate convincingly with a wine-neophyte reader. Our editorial guidelines dictated that we identify with our readers and avoid any elitist attitude toward wine that would alienate them. Therefore, for example, we had to be uncritical and accepting of readers' tastes in wine — no matter how far afield they might be from our own seasoned preferences.

I personally confronted this challenge head-on when writing the section about wine quality: How could I possibly define wine quality in a way that would satisfy my critical standards and yet not embarrass readers into thinking that they were enjoying low quality wine?

That dilemma forced me to look at wine in a completely different way. The view I developed is one that I have turned to repeatedly since then, and I am more convinced than ever of its good sense. That view is that wine is actually two separate products: beverage wine and fine wine.

Beverage wine is simple, tasty, no-fuss, and anyone can feel comfortable drinking it. Beverage wine doesn't require stemware, doesn't challenge you to create the proper food pairing, and isn't meant to be discussed and analyzed as you drink it. A corkscrew shouldn't be necessary to open a bottle of beverage wine — and, for that matter, beverage wine doesn't necessarily even have to come from a bottle.

Fine wine is another thing entirely. It deserves and warrants the traditional trappings of wine, such as a correct serving temperature, a proper wine glass filled only halfway, the swirling and sipping ritual, and a thoughtfully chosen

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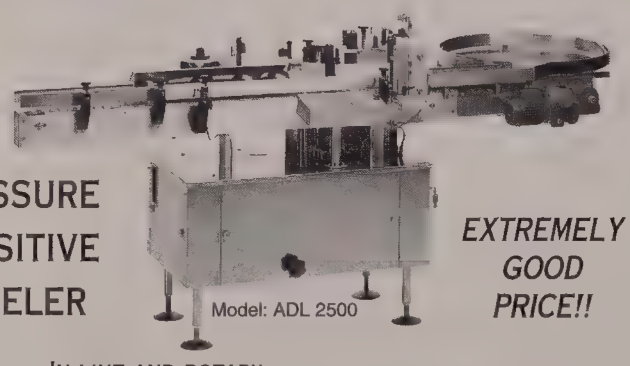

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meal that won't detract from the wine's flavor. Fine wine inspires discussion about itself and the *terroir* which gave it birth. It engages those who drink it and, for some people, fosters a lifelong hobby.

By differentiating between beverage wine and fine wine, I enabled myself to view inexpensive, commercial, mass-marketed wines not as the lowly end of one large category called "wine," but as a valid product which fills a certain niche for certain consumers.

The differentiation enables serious wine lovers and producers of great wine to engage in highbrow discussions of vintage, relative quality, *terroir*, and such without suggesting for one moment that those issues need concern an average wine drinker enjoying a glass of beverage wine. Making a distinction between fine wine and beverage wine is also the only way I know to answer the eternal dilemma of wine marketing: How can we demystify wine for a mass market without stripping the product of its magic?

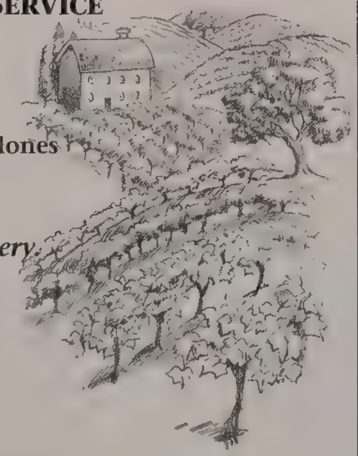
Recognizing beverage wine as a separate and valid product is not necessarily an easy step for most of us. As wine lovers, we all say that we want to help build a wine culture in America. We want to see more people drinking wine with dinner more often. We want, for example, to see the shelter magazines feature wine with every recipe they publish.

But when we say "wine," we speak through our own tastes. How would we feel if a photo in a women's magazine did indeed depict wine being served with the weekday family meal — but the wine was a bag-in-the-box on the kitchen counter, and the glasses were blue tumblers?

If wine is ever to penetrate the mass market, we — as the voice of wine — must embrace the concept of beverage wine. One of the ways that wine marketers can do that is by being brutally honest about the wines they sell. Are they really fine wines? Do they really need a cork, a varietal name, a fancy glass, a winemaker dinner? Or are they just very good beverage wines that are playing what is currently the only viable game in town — the fine wine game?

In my own mind, I draw the line between fine wine and beverage wine somewhere around the $13 to $15 per bottle retail price point. That relegates many very good "premium" wines to the beverage category. Would these wines be even more successful if, instead of competing with fine wines on the basis of shelf price, they wore screw caps on their bottles and occupied the highest ranks of the beverage wine category?

Wine marketers will probably bristle at the idea of positioning their wines in a beverage wine category — and their concerns are understandable. Because premium wines (as we have traditionally used the term) are the strongest segment of the wine market in America today, marketers are justified in upgrading their wines' packaging and image to attract the wine drinker who wants to drink not less, we hope, but better. But we must recognize that in the long term, the only way that America will ever build a wine culture is through beverage wine. ■



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Branding beyond Beaver

The critical importance of building a brand in today's diverse, oversaturated communications marketplace and how to do it.

by Craig Mathiesen
EVP Goldberg Moser O'Neill

Beaver was a dreamer.
Never got it right
Died in living color.
Lived in black and white.
Faithful as the Magnavox,
hung up on a song.
June cried down to the breakfast nook,
"Ward, there's something wrong."

Something's wrong with the Beaver.
Something's wrong with the Beaver.
Something's wrong with the Beaver.
Ohhhh, the Beaver is gone.
Kinky Friedman

Beaver Cleaver was the universally recognized icon of the Baby Boom generation — 77 million consumers whose attitudes and consumption habits have shaped life in America for a generation.

What Ken Dychtwald's *Age Wave* once described as "an enormous pig traveling through the python of life," this massive Boomer population was predicted to be ***the*** market ***forever***. We thought they would influence what everyone after them would eat, drink, think, and buy.

In this era, the marketing mantra for eternal success was "Capture the Boomers and Retire Rich."

It was the Beaver who — after Flower Power, Woodstock, Acapulco Gold, and Vietnam — fueled the 1980s record consumption of table wines. Upon reaching adulthood, the Beav and his friends discovered the sociability, economy, charm, and sophistication of California wines, rebelling against their parents' long fascination with hard, dark liquors.

Unfortunately, the Beav is now *Grandpa* Beaver. What's worse, the lament of Kinky Friedman's song has come to pass: "The Beaver is gone," and his influence has gone with him.

Frightening isn't it?

Frightening, not only to those of us who clock ourselves against other Boomers and buy Oil of Olay, Rogaine, and Viagra by the bucketful, but frightening to any of us who market goods and invest to build brands.

Branding to the Beaver was simple. Too simple. Television was the medium, And the medium was the message. Be there, be visible, and you enjoyed instant demand, credibility, and profits.

You sat back and watched 77 million people who, while different from their parents, thought and bought pretty much the same as every other Boomer. Without much effort you could, and we did, shape consumption of about everything you could put on TV, from cars to popcorn, fashions to wine.

We advertised wine to Boomers, and they bought. "We will sell no wine before its time." I did my part, too, creating spots for Christian Brothers and Fromm and Sichel. And we were all successful.

But, the Beaver is gone, and what will happen to marketers in the next decade could be even ***more*** frightening if we don't take steps to understand and reach these new consumers. In today's diverse, over-saturated communications marketplace, we must shape our brands and appeals to the new consumers, using their terms. We must manage our brands with the dedication of brain surgeons and, most important, we must ***invest in building them now***.

What you do now ***will*** — or ***will not*** — perpetuate your industry, your houses, your labels, and your brands. It will determine if wine is the beverage of choice in the future.

Why invest now?

We all appreciate ***why*** establishing a brand is critical.

Beyond influencing choice and consumption, a brand separates you from the competition, avoids commoditization of the industry, prevents retailers from controlling pricing and the marketplace, adds perceived value, and protects margins.

But why, when everything is going so well, is investing in branding to these new consumers so important now?

It's important because these new consumers are as different from their parents and grandparents as Boomers were from theirs. Worse, they're different from each other, thanks to the mass communications media available to them. By the year 2000, 50% of table wine consumption will come from people born after 1965 . . . just about the time Beaver's brother Wally took his first legal sip.

The most influential years in forming beliefs, attitudes, consumption habits, and social behavior are between the ages of 10 and 25, so consider what the people who currently buy almost half your volume saw and learned during the 10 short, formative years between 1980 and 1990.

While the Boomers grew up with Beaver, this group grew up with MTV, computers, and special effects movies. While Boomers are seeking stability, this market thrives on change. They've seen everything, and they've seen everything change. They embrace change.

In the last eight years, they've experienced Saddam, the Dow 10000, the Internet, the Asian Contagion, cell phones, global TV, and Clinton and Lewinsky.

Faced with all this stimuli, all this opportunity flying at them at cyberspeed, these folks absorb more from more media, faster, more decisively — often more carelessly — than we can imagine. They form opinions instantly. And they can change them just as rapidly.

Any industry or any marketer who just allows this group to oscillate through trends at will — without attempting to exert ***some*** influence — is asking for trouble.

Look at the recent resurgence of premium vodka and cigar consumption. How long will that last? What impact is this having on other industries? General Cigar, Ketel One, and Grey Goose are asking the same questions.

Building a successful brand in today's market

We know we have to combat change, but what are the keys to reaching and influencing these mercurial targets?

A brand is "A promise made and a promise kept." Building a successful brand requires communicating this promise throughout all avenues and levels of communication, from advertising to tasting rooms. Everything.

For all of the books and studies, the essence of a brand can be broken down into three elements:

- Your Brand Promise — the strategic positioning that distinguishes you in the marketplace.
- Your Brand Personality — who you are and how you portray yourself and your product, your human face.
- Your Brand Icons — those characteristics you consistently communicate and zealously protect, from typeface to tone, that aid in generating awareness, appeal, and predictability.

Which is most important? They are all critical, but the one most critical to reaching today's informed, skeptical, changing consumer — the one element generally forgotten — is ***personality***.

Brand personality is ***the key*** to communicating to today's consumers because they have already heard, read and dismissed every claim you can possibly make.

Today's consumers see right through crass and obvious appeals. They look deep for human values, reject quickly, are less willing to provide a second chance, love honesty, and have no compunction about jumping on the Internet to decry anyone or anything that may have displeased them.

An approachable, disarming personality is absolutely critical. Take yourself too seriously, and you'll have serious problems. Be effete, self-serving or snobbish, and you'll be immediately dismissed.

But, put the proper personality in place, be likable and approachable, and you'll reap a receptive, thoughtful, and rewarding audience.

These principles — and the importance of the right personality — cut across all categories. Goldberg Moser O'Neill (GMO) is proud to handle the advertising for Beringer, but let's consider some examples of establishing brand personalities that GMO has done outside the wine category.

Kia — If there's ever proof that the key to developing a brand is a distinctive brand personality, it's Kia Motors, the second Korean auto manufacturer to enter the U.S.

Kia has been beset by the bankruptcy of its parent company in Korea, was established in the U.S. over an excruciating five-year regional rollout, has suffered dealer turnover, and the stigma of being a Korean manufacturer, finishes last in JD Powers Initial Quality Studies, and has front page *USA Today* coverage of being last in crash worthiness. Not exactly like being born with the silver spoon.

We developed advertising to communicate the promise — inexpensive dependability — and a carefully crafted, inviting, distinctive Kia personality defined by what we call the "five Hs": human, hardworking, honest, humble, and humorous. The advertising showed tough little automobiles responding to impossibly stressful situations with self-deprecating humor that essentially said, "Like me."

So, because it is positioned well, fills a niche, and has developed a distinctive personality based mostly on advertising, Kia sold twice as many units in 1998 as 1997, is overtaking Hyundai, and will probably sell as many units as

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Branding works.

Another GMO client, Cisco Systems, is a huge company so on the cutting edge of the Internet that — like other giants riding the technology wave — decision makers were tempted to avoid advertising all together. But no advertising would make Cisco invisible, a faceless company, or worse, allow confusion with two other companies with similar names existing in Northern California: a food wholesaler and a trucking firm.

Without creating awareness, Cisco would be vulnerable to competition, adverse public sentiment, financial analysts, and even with its size, might fall victim to some future merger mania.

Cisco needed to establish its brand and its image.

Insight suggested that the greatest fear in communications technology is the fear of being left behind. But unimaginable things are already being done at Cisco. At Cisco, the future is today. The company is empowering the future — the Internet generation.

But the *key* is once again personality. Real, technical, and global, but designed to be warm, human and embracing verses the cold technocratic personas of an IBM or Microsoft. To accomplish this, we used the faces of real people, young and old, rich and poor from countries around the globe — each repeating such mind-boggling facts as the rapid growth of Internet communication and asking, "Are you ready?" These human faces enable Cisco to communicate that they are indeed empowering the Internet generation.

Marketing to the new generations

So what principles do these examples follow that the wine industry can practice as well? There are six key factors in marketing to this new critical target:

- **Today's consumers are smart.** But they are diverse. They are gifted versus their forefathers — but they are still consumers and still subject to gentle persuasion.
- **They're not waiting to embrace you**. You have to break through. As a matter of fact, they're so media and message savvy, you really need to understand their language to even gain their attention.
- **Advertising does influence them.** They may ignore the straight-forward Karl Malden talking head–type ad, but some type of ironic, humorous, sympathetic personality will catch their attention and is critical to success.
- **There's no time like the present** to begin communicating with new consumers. Wait too long and someone else will beat you to it.
- **Think out your strategy carefully.** It's fine to be innovative, but there is sufficient research available to craft the best message possible to distinguish yourself.
- **Above all, target your message.** Not only must you target for efficiency, you need to know that these people are bombarded by information and advertising from all sides, so your message, your personality, must be true and consistent throughout all means of communication. ■

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Minimizing your risk

by Carolyn Silvestri,
Personnel Perspective

Every winery owner must consider methods to protect the valuable asset that his or her business represents. The penalties for not complying with employment-related regulations can be staggering. You can minimize the risk of claims against your winery by creating a workplace that demonstrates:

- Fair, equitable employment practices,
- Prompt, effective investigation and resolution when problems arise, and
- Freedom from (no tolerance for) discrimination and harassment.

Your greatest risks are in the areas of hiring practices, management practices, methods used to take corrective action when there are problems, and termination practices. Following are a few basic things that you should have in place to reduce your potential liability and preserve your winery's assets:

Legally compliant record keeping systems, including:

- Personnel files
- Mandated postings
- Leaves of absence (pregnancy and family leaves)
- Workers' compensation procedures

Key employment policies related to:

- Equal Employment Opportunity
- "At Will" employment
- Americans with Disabilities Act (ADA) compliance
- Drug and alcohol use in the workplace
- Sexual harassment

Prompt, thorough investigation of employee complaints, including:

- A response timeline
- Documentation
- Non-discriminatory assessment
- Appropriate corrective action

Effective and legally compliant practices for:

- Hiring staff
- Evaluating performance
- Investigating claims of harassment
- Correcting performance problems
- Terminating staff

Compensation and benefits:

- ADA-compliant job descriptions
- Market-driven, competitive salaries
- Wage and hour compliance

You may feel very confident in some of these areas but not so sure that other areas would stand the test for legal compliance. The first step to ensure you have satisfied your obligation is to formally assess the situation. You can do this internally if you have a knowledgeable human resources person or have a professional come in and assess your situation. The purpose is to provide an overall review of your procedures, records, policies, and programs. A good assessment should:

- Identify areas where the winery may not be meeting legal standards according to federal and state employment laws;
- Identify areas that are potentially high risk;
- Evaluate existing human resources policies and procedures and confirm that they are being followed;
- Recommend corrective actions for consideration; and
- Assist in establishing priorities for the human resources function.

The assessment process typically includes in-depth information-gathering meetings with people at the winery responsible for human resources activities. All managers/supervisors should be interviewed. They will provide an important reality check. You may have very clear personnel policies in writing but find during your conversations with your managers that the written word is not your actual practice.

The interviews with managers/supervisors may also demonstrate a need for training. If these individuals have not received any formal management training, they may be unaware of employment laws or practices. If they are miscommunicating with your employees on key issues, this is an area of high liability. All managers/supervisors must have a thorough knowledge of the laws governing employment practices — hiring, communicating, discipline and corrective action, leaves of absence, and termination of employment.

Your assessment process should also include a thorough review of your human resources-related documents. The entire list is quite lengthy, but at minimum, you should review the following:

- Employee handbook
- Personnel files
- Payroll documents
- Job descriptions
- Completed I-9 documentation
- Completed performance reviews
- Corrective action documentation
- Illness and injury prevention program

Once you have completed your interviews and reviewed your documentation, sit back and really assess where you are. Did you find that your recordkeeping is adequate, and you have all the required posters displayed? Are you comfortable that the people involved in the recruitment of new employees are knowledgeable about what they can and can't ask during an interview?

Are you paying employees fairly? Are employees who are performing the same or similar job duties paid without regard to gender, race, national origin, or any other areas where discrimination could be charged? Are employees receiving performance reviews according to your personnel policy? Are the reviews done in a timely manner and are they written in a manner that could support and defend a possible termination decision?

When an employee has been terminated, does good documentation exist regarding the reasons for termination. Do you have a legally compliant Discrimination and Harassment Policy and have all of your employees been trained regarding the policy and process that should be followed? Finally, do you feel your managers and supervisors are a possible liability, or do they represent your winery effectively as well-informed and trained messengers of your practices and policies?

Your risks are great in today's

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employment field, but, as you can see, much can be done to reduce those risks and bring your winery into a relatively good state of compliance. Be knowledgeable about your obligations, investigate to determine your level of compliance, and assess your current state. Then identify those areas that raise red flags. These are the areas of greatest liability that too often lead to large dollar lawsuits against employers just like you.

The next step is to develop your plan of action. Look at those red flag areas and decide what you need to do to bring your winery into compliance. You may be able to assign an internal staff member to spearhead the project.

Fortunately, the wine industry is wonderful for networking opportunities. Have your internal person make a few calls to human resources individuals in other wineries. Find out what they do and whether they would be willing to share their findings. Ask them what professionals they use to help them maintain compliance with the ever-growing complexities of human resource law.

Take one step at a time in minimizing your risk. If you do get called to the mat for non-compliance, demonstrating that you are in the process of rectifying your mistake can reduce or eliminate a penalty. There is more compassion for employers who have recognized the error of their ways and are acting to correct them than for employers who have disregarded their legal obligations as fair employers.

The task is daunting, but don't be overwhelmed. Minimize your risk by being informed, assessing your current compliance situation, and making improvements. You'll sleep better at night and have the additional benefit of working with a group of happier, motivated, and more productive employees. ■

Carolyn Silvestri is owner of The Personnel Perspective, a human resources consulting, management/supervisory, training, and executive search/recruiting firm specializing in the wine industry in Santa Rosa, CA, tel: 707/576-7653.

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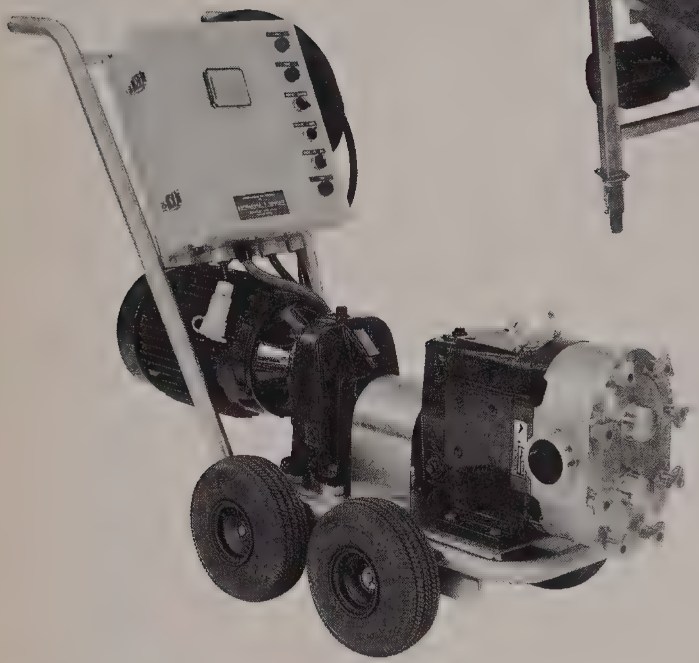

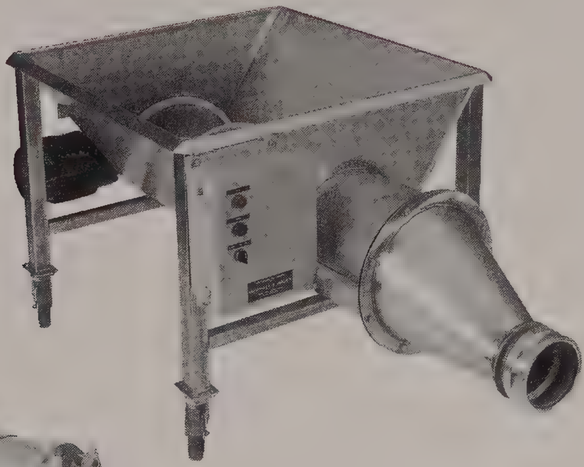

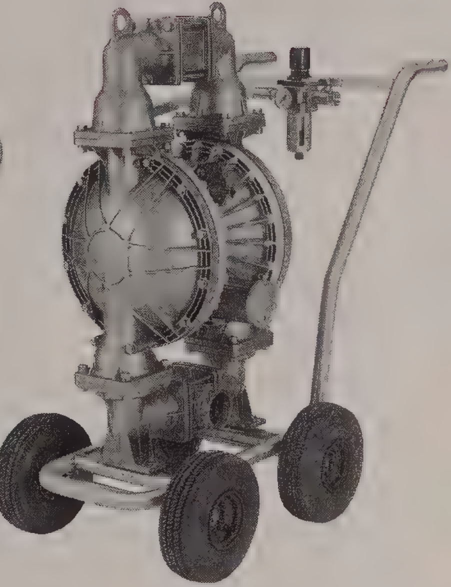

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Randy Bock 707/333-9210
Vineyard development, North Coast vineyards - 18 years
BS, plant sciences/integrated pest management, UC Davis, 1980

Jeff Koligian 408/670-7680
Grew up on family farm, 3rd generation grape grower
Small vineyard owner, Paso Robles, CA
Vineyard manager/consultant - 27 years
BS, agriculture business, CSU Fresno, 1978

Edward Nikssarian 559/307-6094
Grew up on family farm, 3rd generation grape grower
Small vineyard owner, Fowler, CA
Director, Raisin Bargaining Association
Licensed PCA - 20 years; Ranch supervisor - 7 years
BS, agriculture business, CSU Fresno, 1981

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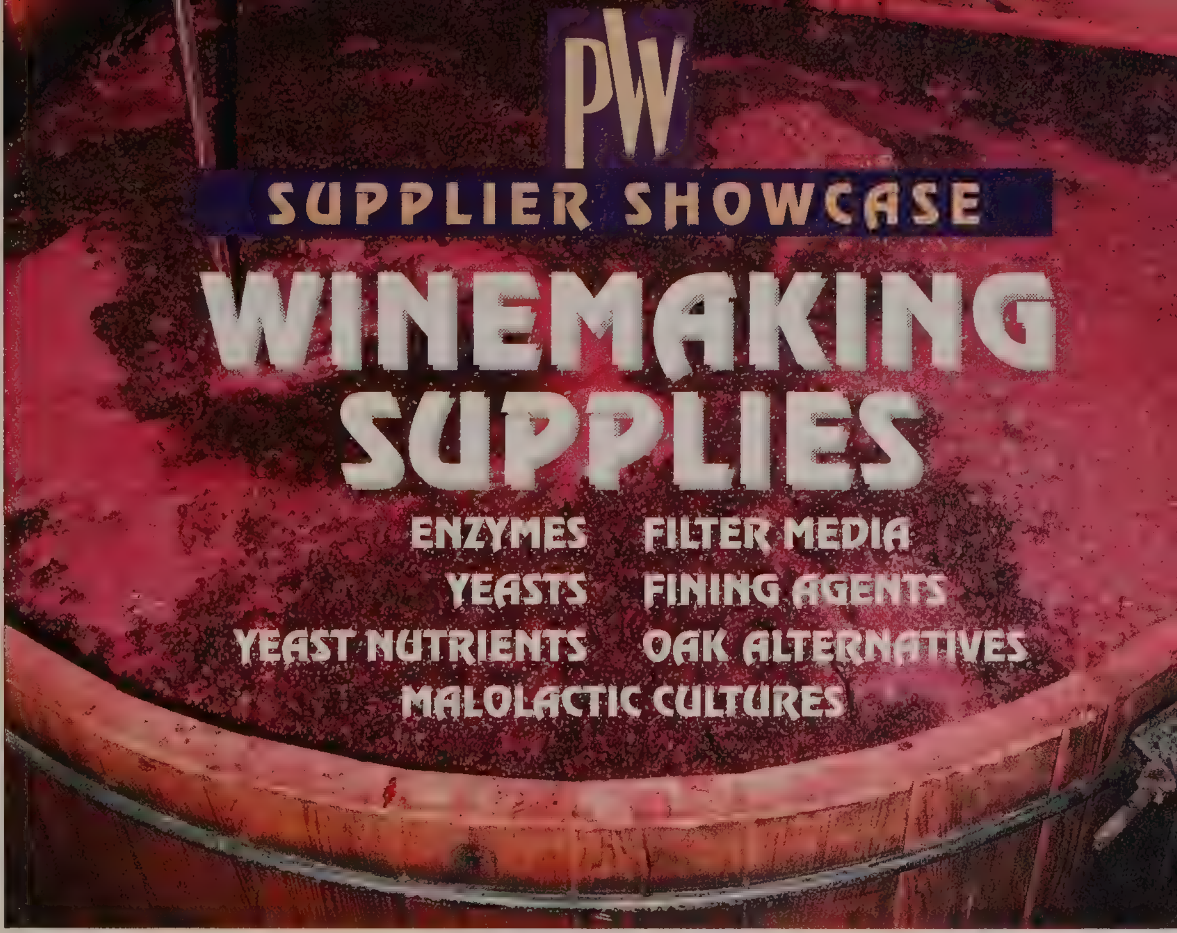

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Winemakers are going alternative with World Cooperage oak barrel alternatives. World Cooperage recognizes your need to economically add oak flavors to wine by producing 24-month air-dried and fire-toasted oak chips, barrel renewal systems, and tank stave systems. All three products are available in French, American, and chestnut oak. Tatlock and Thomson of Scotland has conducted comprehensive research on size, shape, and toasting time to maximize oak flavoring. If you would like more information regarding World Cooperage products or research, please contact the company's Napa office at 707/255-5900.

For more information, contact:
World Cooperage
2557 Napa Valley Corporate Dr., Suite D
Napa, CA 94558
tel: 707/255-5900; fax: 707/255-5952
website: www.cooperage.com

PLEASE SEE WORLD COOPERAGE ADS, PAGES 2, 84.

LALLEMAND Inc.

Through extensive research and development, quality management, and customer service, Lallemand has become one of the world's leading suppliers of specialty yeast strains for winemaking.

Lallemand has been producing fermentation products in dried form since the early 1970s and now produces over 150 different wine yeast strains in active dried form. These wine yeasts are carefully isolated and selected by top enologists and researchers at renowned enological institutes. They are grown and dried under precisely monitored conditions in Lallemand's ISO 9002 production facilities. These active dried yeast strains are then carefully packed to maintain optimal quality and facilitate storage.

Lallemand produces LALVIN® and ENOFERM® active dried wine yeasts, easy-to-use MBR™, 1 STEP™ and STANDARD™ freeze-dried malolactic bacteria cultures, and FERMAID® fermentation nutrients.

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Lallemand's large selection of wine yeast strains and malolactic bacteria cultures enables winemakers to choose the fermentation tools best suited to their stylistic goals.

For more information, contact:
Lallemand Inc.
Gordon Specht,
Specialty Fermentation Products
PO Box 5512, Petaluma, CA 94955
tel: 707/526-9809; fax: 707/526-9803
e-mail: gspecht@lallemand.com
and ccone@lallemand.com

PLEASE SEE LALLEMAND AD, PAGE 16.

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STAVIN INCORPORATED

StaVin Incorporated designs oak infusion systems offering versatility and cost-effective alternatives to oak barrels. Available in all toast levels, StaVin offers premium quality French and Hungarian 24-month air-dried oak and 36-month air-dried American oak.

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French Oak Stave Segment

StaVin's Modular Tank Units, with full staves, achieve the maximum benefit within stainless or oak tanks. StaVin's new French Oak Stave Segments, conveniently packaged in food-grade, FDA-approved, nylon 15-pound bags, and American and Hungarian Oak Bean in 10- or 20-pound bags are placed directly in the tank.

StaVin offers three methods to impart neutral barrels with equivalent flavors of new French, Hungarian, and American oak barrels. Traditional barrel inserts are loaded with full staves. Two unique alternatives to pulling heads from barrels are StaVin's patented Oaksleeve, which is comprised of mini-staves packaged in FDA-approved nylon, and StaVin's stainless steel Infusion Tube, loaded with oak cubes; both are inserted through the bunghole.

StaVin represents three-year air-dried Tonnellerie Sansaud barrels, two-year air-dried Tonnellerie Berthomieu and Tonnellerie Bernard French oak barrels, and two-year air-dried Kelvin Cooperage American oak barrels.

For more information, contact:
StaVin Incorporated
PO Box 1693, Sausalito, CA 94966-1693
tel: 415/331-7849; fax: 415/331-0516
e-mail: info@stavin.com

PLEASE SEE STAVIN AD, PAGE 31.

PALL CORPORATION — Pall Food and Beverage Division

Pall Food and Beverage offers winemakers an economical and comprehensive line of filtration and separation products designed to meet wine production and organoleptic requirements.

As a leader in the design, production, and marketing of fine filtration and separation systems for fluid clarification, Pall Corporation has supplied filtration equipment for winemaking for over 15 years and has widespread installations of filters for the cold microbial stabilization of wine.

Pall has developed an all-inclusive wine filtration product concept called the OenoLogic approach. New technologies are developed for the future of wine production by translating Pall's broad experience in the industry into efficient and economical products. Filtration and separation products are specifically designed to meet the requirements for wine and address your entire process from utilities to wine lees, post-fermentation clarification, bottling, and your quality assurance laboratory.

Examples of new Pall products developed with the OenoLogic approach include:

The OenoClear™ cartridge filter is the first complete, reliable, economical alternative to fine sheet filters and pre-filtration used prior to final filtration.

The OenoFlow™ system is an automated cross-flow process system, with Microza (a trademark of Asahi Chemical Industry Co., LT) microfiltration hollow fibers, created specifically for wine applications. The OenoFlow system can replace diatomaceous earth (DE), pad filtration, and pre-filtration prior to final filtration in the bottling process.

The PallSep™ system is a revolutionary separation technology that employs vibrational energy, instead of high cross-flow rates, to generate shear at the membrane interface. PallSep systems can be used to recover lost product from wine lees.

For more information, contact:
Pall Corporation
2200 Northern Blvd., East Hills, NY 11548
tel: 800/717-7255; fax: 516/625-3610

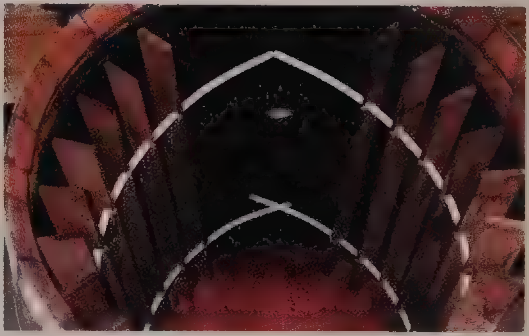
PLEASE SEE PALL CORPORATION AD, PAGE 9.

INNERSTAVE, Inc.

"Original ideas are few," and most are not effective tools to save time or money. Innerstave is the original barrel insert and has been used as an effective tool to add oak character to wines for over 19 years. It saves money through lower costs for oak barrel flavors.

Since 1979, Innerstave has gained wide acceptance in all forms of barrels and tanks because of its exclusive, non-invasive, cleanable design. Innerstave, designed for stainless tanks, requires no welding and is installed by the company's own qualified coopers.

Innerstave receives highest acclaim for its award-winning, premium oak character which can be found in many highly rated wines. Innerstave's on-site supply of aged French and American oak ensures availability of prepared oak for each Innerstave order, and gives the winemaker control of oak type, wood-to-wine ratio, and toast level. Each is important when making award-winning wines.



Innerstave, through its sister company, Custom Cooperage, also provides barrel consultation, barrel care, barrel and tank accessories, as well as creative oak solutions for wines following fermentation.

The company's well-known oak chips, **OakPLUS,** are a flavor benchmark within the wine industry.

For distant winery friends that the company has difficulty visiting regularly, staff has invented **Chain 'O Oak** as a self-install alternative to a new barrel Innerstave.

Innerstave guarantees satisfaction.

For more information, contact:
Innerstave, Inc.
Bob Rogers
24200 Arnold Dr., Sonoma, CA 95476
tel: 707/996-8781; fax: 707/996-1157
e-mail: bob@innerstave.com

PLEASE SEE INNERSTAVE AD, PAGE 19.

VINQUIRY

Vinquiry offers a comprehensive range of fermentation products for the wine industry. Clients can select from over 35 yeast isolates to make suitable matches for fermentation, taking into consideration grape variety, nutrient status, desired aroma and flavor profiles, and wine style. Experienced, knowledgeable staff assist in evaluating parameters to make yeast and nutrient recommendations that will optimize fermentation conditions for wine quality and to avoid stuck fermentations.

Vinquiry is the exclusive U.S. distributor for the ENOFERM line of specialty yeast developed by Dr. Paul Monk and produced by Lallemand. Additional Lallemand strains of active dry yeast and a collection of yeast on slants are also available.

Several selections of malolactic bacteria including the MCW strain, which was isolated and developed by Vinquiry, are available. Direct addition cultures include the MLD strain, which has been pre-adapted to tolerate wine alcohol levels.

Vinquiry's nutrient products encompass the full range of fermentation requirements along with laboratory testing to determine nutrient needs. Available products include Fermaid, Cerevit, diammonium phosphate, Oenovit, plus yeast autolysate, hulls, and both dry and pourable extracts. To optimize red wine fermentations, Lallyzyme EX is available to enhance color stability and mouthfeel by optimizing condensed tannin extraction during maceration.

In addition to the ENOFERM specialty fermentation products, Vinquiry offers carefully selected products from the Martin Vialatte line of specialty products for premium wine production. Tannins, including oak tannins Oenotan and Tanichene, and Vitanil VR, suitable for red wine applications, are now available. SO_2 in an easy-to-use tablet form is available in three application sizes.

For more information, contact:
Vinquiry
7795 Bell Rd., Windsor, CA 95492
tel: 707/838-6312; fax: 707/838-1765

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AMERICAN TARTARIC PRODUCTS

American Tartaric Products Inc. (ATP), a rapidly growing company, has a unique position as a supplier to the wine industry. It offers a full line of specialty products: yeast, yeast nutrients, enzymes, antioxidants, liquid gelatin, fining and stabilizing agents, and filtration aids, as well as a complete line of chemicals, such as tartaric, malic, and citric acids, cream of tartar, bentonite, sanitizing agents, and more.

ATP is the U.S. representative for the Italian company AEB, which is considered an innovative leader in the wine and juice industry of Europe, South Africa, and South America. ATP also works closely with BASF in the distribution of its Divergan (PVPP).

ATP may be considered the bridge of communication, keeping the American wineries abreast of innovations occurring in the other major wine-producing countries. ATP's technical sales representatives have been trained in Europe to offer technical support for all the company's specialty products.

With three distribution points in California and one in Washington, ATP is in an excellent position to offer fast, reliable service.

For more information, contact:
Larry Biagi, Ted Goldbeck, or Luca Zanin
American Tartaric Products Inc.,
tel: 707/433-1606 or 914/834-1881
fax: 914/834-4611

KLR MACHINES, Inc.

KLR Machines, Inc., represents the Begerow Co., which produces the BECO line of filtration and fining products.

BECO filter products are used by many wineries throughout the U.S. More than 30 years of research and practical experience are reflected in the quality and performance of BECO products.

BECOFLOC's mechanically fibrillated structure, combined with its adsorbent quality, makes BECOFLOC more efficient in removing ultra-fine turbidities and colloids than cellulose fibers, perlite, or diatomaceous earth. When added to other filter aids, BECOFLOC will improve filtration efficiency.

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350 Morris St. Suite E, Sebastopol, CA, 95472
tel: 707/823-2883; fax: 707/823-6954 or
47 West Steuben St., Bath, NY 14810
tel: 607/776-4193; fax: 607/776-9044

PLEASE SEE KLR AD, PAGE 71.

RÖHM ENZYME Division of Juvenal Direct, Inc.

Juvenal Direct, Inc., is the U.S. West Coast distributor to the wine industry for Röhm Enzyme. Röhm Enzyme — headquartered in Darmstadt, Germany, and a division of the Hüls Group — is a leading manufacturer of enzymes for the food and beverage industry. Juvenal offers the full line of ROHAPECT® enzymes including: ROHAPECT D5L Special, a concentrated pectinase; ROHAPECT MA Plus, a mash enzyme for increased yield and higher throughput in press systems; ROHAPECT BIL, a pectinase-hemicellulase for clarification and improved clarification; and ROHAPECT VR-C, for red wine processing to increase color extraction and stability. Enzymes are available from Röhm's temperature-controlled warehouses in Washington and California.

For more information, contact:
Röhm Enzyme
Division of Juvenal Direct, Inc.
PO Box 5449, Napa, CA 94581-5449
tel: 707/254-2000; fax: 707/642-2288

PLEASE SEE RÖHM ENZYME AD, PAGE 83.

CELLULO CO., Division of Gusmer Enterprises, Inc.

Cellulo Company provides a variety of processing aids to fit your specific applications, including Novo Nordisk enzymes, Nalco colloidal silica, Chr. Hansen Viniflora, isinglass (flocced and Dryfine), gelatin, bentonite, Red Star yeast and yeast nutrients, Kolorfine™ and KLEAR-MOR™.

A variety of Novo Enzymes — Ultra SPL, Ultrazym, Novoferm 61, and Pectinex AR — provides varying degrees of esterification for viscosity reduction, clarification, and maceration of plant tissue, which leads to clear, easy to filter juice and wines. An exciting and successful introduction to the market last season was Vinozym G, a macerating enzyme that produces greater anthocyanin extraction and selective extraction of desirable tannins leading to improved sensory characteristics.

Chr. Hansen Viniflora malolactic fermentation direct inoculant freeze-dried preparations induce MLF quickly and safely under common vinification conditions.

For your isinglass needs, Cellulo provides Drifine and Flocced. Isinglass is a high molecular weight protein that has a net positive charge at the acidic pH of wine. This positive charge causes flocculation of yeast and other suspended solids and also forms complexes with negative charged polyphenols that are responsible for astringency and harsh flavors.

Kolorfine™ can be used to correct and stabilize color, particularly in white and blush wines; clarify wines, juices, and vinegars; freshen "stale" or oxidized wines; and soften harsh flavors in table and dessert wines.

KLEAR-MOR™ fining agent is used to clarify wines, fruit juices, or vinegar; to break a "carbon haze" and "stuck" fining; as a "topping" agent for gelatin, Kolorfine™, or bentonite.

Cellulo's trained technical sales staff can help you with your fining needs.

For more information, contact:

Cellulo Co.,
Phil Crantz, Rodger Pachelbel,
or Ken Stewart
2949 E. Townsend Ave., Fresno, CA 93721
tel: 209/485-2692; fax: 209/485-4254

FILTROX Division of Juvenal Direct, Inc.

FILTROX began to manufacture depth filter sheets in 1938, with just three grades. Now, 60 years later, this product line offers more than 30 grades to meet the non-compromising challenges of today's markets:

- economical and yet reliable,
- environmentally friendly and yet efficient.

All FILTROX depth filter sheets are available in a wide range of sizes to fit virtually any sheet filter; also, in modular form (so-called stack filters) in both standard diameters, 12 and 16 inches.

FILTROX now has three manufacturing plants, one in Switzerland, one in the UK, and one in the Czech Republic.

FILTROX depth filters are complemented by the SECUROX cartridge filter line, with 17 different types/grades of cartridges being offered.

All FILTROX filter media meet FDA and Food Chemical Codex rules and regulations.

A comprehensive line of filtration equipment — such as plate/frame filters, horizontal pressure-leaf filters, vertical candle filters, cross-flow filters, and cartridge filter housings — completes the FILTROX program.

FILTROX has been fully certified under ISO 9001 since 1995.

FILTROX is represented in North America by the Filtration Division of Juvenal Direct, Inc., of Napa, CA. Juvenal is a full service company offering the complete line of FILTROX depth filter sheets, module filters, and cartridges ex stock and providing prompt on-site service and advice.

For more information, contact:

FILTROX Division of Juvenal Direct, Inc.
PO Box 5449, Napa, CA 94581-5449
tel: 707/254-2000; fax: 707/642-2288

PLEASE SEE JUVENAL DIRECT ADS, PAGES 20, 41 & 106.

CHR. HANSEN, Inc.

Malolactic fermentation does not have to be troublesome or time consuming anymore. *Viniflora Oenos*™ is a malolactic culture which can be added **directly** into your finished wine with no preparation or adaptation necessary prior to use.

Viniflora Oenos™ is a carefully selected strain of *Leuconostoc oenos*, transformed into a highly concentrated, freeze-dried culture that gives you full process control through direct inoculation. The reliability of its performance is supported by fully documented research and strict quality control, backed up by professional service from Chr. Hansen's experts. The benefit is optimal quality year after year.

Chr. Hansen has been pioneering biotechnology since 1874 and has revolutionized the cheese manufacturing industry by inventing a method for standardization of the rennet enzyme. Today, Chr. Hansen is a world leader in a variety of natural additives for the food industry, notably bacterial cultures. Chr. Hansen affiliates in 20 countries and agents all over the world are supported by advanced facilities for biotechnological research and *Viniflora Oenos*™ represents the innovative advances pursued by Chr. Hansen.

For more information on Viniflora Oenos™, please contact:

Chr. Hansen, Inc.
Annamarie Kyne
9015 W. Maple St., Milwaukee, WI 53214
tel: 415/485-1870 or 800/476-8777 ext. 5863;
fax: 415/485-0735

PICKERING WINERY SUPPLY

Pickering Winery Supply offers a unique, directly-dispersible casein fining agent in addition to yeasts and direct-inoculum ML cultures.

Casein has long been recognized in Burgundy and Australia as an effective, gentle way to remove bitterness, brown pigments, and oxidized phenols in red and white wines. However, though many winemakers in the U.S. have tried it, even more have been dissuaded by the difficulty of the agent's application.

Now, Meggle of Germany has solved this problem with a product that uses cellulose as a carrier and can be directly dispersed in wine. This means that casein's excellent characteristics in the lab can be easily reproduced in the winery, a predictability that allows winemakers to selectively target different components in their wines.

Pickering Winery Supply also offers MiTech's advanced fermentation products: MI-8, MI-16, and MI-24 yeasts, and 44-40 and 54-40 direct-inoculum malolactic cultures.

MI-8 produces large quantities of deep, rich aromatics associated with Burgundian grape varieties, such as Chardonnay and Pinot Noir. MI-16 yeast is an excellent all-purpose yeast that produces large quantities of complex and appealing aromatics. It has excellent cold and heat tolerance and is genetically deficient in the biochemical pathway that produces H_2S.

In 1998, Pickering introduced MI-24 which is a producer of strong aromatics. It is recommended for varietals such as Viognier, Riesling, and Chenin Blanc. A good inhibitor of botryticine production during fermentation, it is also often effective at devegetizing Cabernet Sauvignon, Merlot, and Sauvignon Blanc. It performs extremely well at low temperatures.

For more information, contact:
Pickering Winery Supply
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SCOTT LABORATORIES, Inc.

Scott Laboratories has offered fermentation supplies since 1934. Scott began working with Lallemand in 1974. In 1999, Scott will offer over 35 yeast strains produced by Lallemand.

The EC1118, 71B, and K1 strains have been popular since introduction to the North American market in the 1980s. Later portfolio additions included CY3079 (from Burgundy), D254 (from the Rhone Valley), and BM45 (from Brunello di Montalcino).

Recent introductions include D80 (a Syrah isolate from the Rhone), GRE, and Barolo. GRE was specifically isolated for enhancing characteristics of Rhone varieties. The Barolo isolate is recommended for use with color problem varietals such as Nebbiolo, Barbera, and Pinot Noir.

Scott also offers yeast selections from J. Laffort in Bordeaux. These strains (produced by Lallemand) include the popular VL1 and VL3 for whites, ST for residual sugar whites, F5 and F10 for Bordeaux style reds, and BJL for light reds and primeurs.

Scott offers three Lallemand-produced, freeze-dried forms of ML bacteria: Direct inoculum (or MBR), the One Step (requires only minimal build-up), and standard.

Laffort tannins at fermentation and pre-bottling can enhance and stabilize color while improving structure and body. Tannins may also inhibit laccase activity from Botrytis, prevent oxidation, and remove H_2S and mercaptan compounds.

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Scottzyme proprietary enzymes include PEC5L (concentrated pectinase), Color Pro (for color stabilization and better settling), Color X (for color extraction), HC (a hemicellulase blend for hard-to-press grapes), and KS 9 for hard-to-filter wines.

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NAPA FERMENTATION SUPPLIES

Napa Fermentation Supplies offers a complete line of Lalvin fermentation supplies including 22 strains of wine yeast. The yeasts available are Lalvin BM45, Lalvin S6U, Lalvin D254, Lalvin CY3079, Lalvin RA17, Lalvin T73, Lalvin R2, Lalvin Zymalfore VL1, Lalvin EC1118 Prise de Mousse, Lalvin 71B, Lalvin K1, Lalvin L2056, Lalvin Wadenswil 27, Montrachet Davis 522, Champagne Davis 595, Uvaferm PM (Prise de Mousse), Uvaferm CEG (Epernay 11), Uvaferm Steinberger, Lalvin RC212, VL3, F-10, and F-5.

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For more information, contact:
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PLEASE SEE NAPA FERMENTATION AD, PAGE 86

FOOD, WINE, & SPIRIT GROUP

In winemaking, there is no doubt Americans have learned a lot from the French. However, U.S. pioneer spirit and technology have elevated wine quality and challenged age-old French winemaking techniques. In reaction to this, the French have explored new directions toward the improvement of wine quality, and in this search **every** detail is important.

In recent years, the French have reconsidered the benefits of some wine agents that have been used in winemaking for decades. Among these agents are tannins known as "tannins oenologiques." Suppose tannins from the best air-dried French oak wood could be carefully removed and subsequently preserved for use in winemaking. These tannins could then be precisely measured and added to grape juice or wine. This product already exists under the name — Oenotan Selection Freeze Dried Oak Tannins.

Oenotan Selection is produced from high quality, three-year-old, air-dried oak of the Limousin, Allier, and Nevers forests. Phenolic compounds (mostly tannins) are carefully removed by the use of water, **not** ether or alcohol. The use of water to remove these tannins develops hydrolysis of the glucosides (association of tannins and sugars), which reduces bitter and astringent characteristics often associated with wood tannins.

The resulting water solution is slowly concentrated. This concentration step is analogous to the barrel toasting process as it also generates furanic compounds. The resulting solution is then freeze dried. Oenotan Selection can yield results substantially identical to the phenolic compounds found in wine that has aged in an ideal French oak barrel and costs only pennies per case.

For more information, contact:
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Services: chemical and microbiological analysis; problem-solving and technical consultation on wine quality improvement.

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Stuck ferments: The Wine Lab has worked with thousands of problem fermentations, using the latest research results to help winemakers understand the elaborate and complex interactions that cause yeasts to stop. Temperature acclimation, amino acids, intercellular communication, glucose/fructose ratios, and glucose transport are now recognized as very important to yeast survival, as is inhibition by vineyard yeast *Kloeckera apiculata.*

Yeast strains: Yeast studies initiated in the 1970s continue, as DNA karyotyping determines the origins of yeast strains in spontaneous fermentations, with surprising results.

Spoilage: Founder Lisa Van de Water has been fascinated with microbial spoilage of wine since a major Brettanomyces outbreak in 1973, so microbiology is a specialty of The Wine Lab. Wine microbiology classes and defect tastings are held periodically. Research includes seeking new species of "ferocious" Lactobacilli like *L. kunkeei* and investigating lysozyme for potential use against spoilage bacteria.

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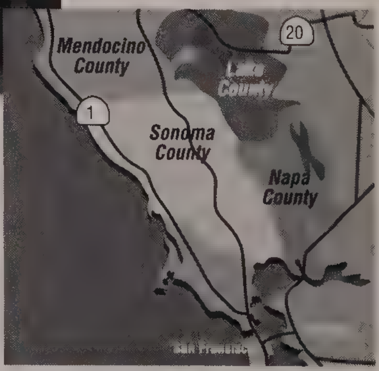

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by Tim Olson

Evolution and revolution

In my first column (Jan/Feb 1999), I discussed a number of issues that bear consideration when planning the purchase of barrels and oak alternatives for the year. These issues: cooperage evolution, vineyard evolution, style factors, and experimental strategies all have something in common — evolution!

The last few years have brought many changes to the wine industry and the cooperage business. We are in the midst of a technological revolution and an industry evolution, and the future clearly promises many more changes.

I wish to address the subject of change in this column. "You can lead a horse to water, but you can't make it drink" is a saying familiar to most people. The message is that unless someone is prepared to change, they will not, even when presented with convincing evidence.

Therefore, before we discuss some of the relevant changes facing the wine and cooperage industry and how you can harness this opportunity to your benefit, it might do us well to spend some time on the philosophical aspects of change.

Philosophical ruminations

All the knowledge in the world will do you no good unless you are prepared to employ it. In other words, knowledge unapplied is worthless.

Human beings are creatures of habit; we tend to fall into behavior patterns and are quite resistant to change. Where once as children in learning to walk, we routinely fell on our faces, got up, brushed ourselves off, and went on with the task of learning to walk, as typical adults, we are less concerned with results and more concerned with the process. We want to minimize mistakes. We want to play it safe. If it ain't broke, don't fix it!

But an evolution is occurring in our business. Between the cooperage evolution, the vineyard revolution, and the demands of a competitive marketplace, change is here to stay for awhile. A winery's future success depends upon today's decisions.

In evolutionary times, the only real choice winemakers have is how best to deal with changes. Benjamin Hoff offers excellent advice on that topic in one of my favorite books, *The Tao of Pooh.*

> *How can you get very far,*
> *If you don't know Who You Are?*
> *How can you do what you ought,*
> *If you don't know What You've Got?*
> *And if you don't know Which To Do*
> *Of all the things in front of you,*
> *Then what you'll have when you are through*
> *Is just a mess without a clue*
> *Of all the best that can come true*
> *If you know What and Which and Who."*
>
> *Winnie the Pooh per Benjamin Hoff*

Knowledge applied

In a world of swirling change, it's important to know where you are, where you're going, and how you're getting there. As the poem says, if you don't know what and which and who, then all you'll have is a mess without a clue.

The bottom line here is that you have to be asking yourself and everyone connected with your winery a lot of questions. There is much new information to digest, and more is being generated all the time. New research and field trials continue to provide ever-greater insight into the causes and effects of winemaking variables.

Consumer tastes have changed in the last 10 years. "Out" are the hard, rustic age-worthy Cabernet Sauvignons. "In" are the soft, supple, balanced Cabernet Sauvignons that can be enjoyed upon release and yet may improve with a few years cellaring.

Who knows what consumers will be yearning for in the next 10 years. Some have suggested Syrah or Shiraz, but who's to say? It may be another varietal; it may just be another change in style for Cabernet Sauvignon or Merlot. Whatever it is, the best way to succeed in the future is by being prepared today. And that means having a game plan.

A game plan will help answer the three critical questions: 1. Where are you? 2. Where are you going? 3. How will you get there? Let's discuss them one at a time.

Where are you?

"Where are you?" seems like a simple enough question. The simple answer is you're a winery in Napa or New York. But the real answer is not so simple. It's something like asking "Who are you?" The simple answer is that you're a winemaker. But the more complete answer is that you're also a wife/husband, parent, son/daughter, friend, soccer coach, and so on.

Just as who you are changes over time, where you are as a winery today is a moving target. Twenty years ago, the answer to our question would have been: "I am a winery competing in a local market." Twenty years ago, you bought or grew some grapes, made the best wine you could, and then went out to sell it.

Today, you are a winery competing in a global market. An abundance of imports from all over the world vie for attention in the stores and restaurants of your local market with many different brands, styles, and price points. The effects of this level of competition for the consumers' wine dollars are still being played out.

Gone forever are the days when the grower dropped off the grapes, the winemaker made them into wine, and then gave it to the sales people to sell with no communication between the three during the process. The days of marketing are here to stay, and marketing demands an integrated approach.

As winemakers, we tend to bristle at the idea of someone, especially if they're from marketing, telling us to make "our" wines in a different style. After all, we know best. We've done some trials, we've applied our knowledge and experience, and the style of wine and how we are making it should not even be questioned, let alone subjected to change by "outsiders."

But as I stressed in my first column: "If you're making high quality wines in small amounts, then you can pretty much make it in any style you choose. As long as it's good, there's always a market. But if your production is large, then the success model dictates that you learn what customers are looking for and find a way to get it to them."

You must constantly ask yourself: Where am I as a winery? Where am I as a player in the global wine game? Where does my winemaking style fit in the grand scheme of things? Where am I in terms of my varietal mix? Where am I in relation to my competition, both foreign and domestic? Where am I stylistically?

After you've answered these questions, it's time to ask: Where am I going?

Where are you going?

Once you've established the reference point of where you are, you can determine where you want to be and ultimately how to get there. Maybe you're already there, and you don't know it because you never stopped to question things. Then again maybe you're not!

Where you are going is really a matter of choice. You can just float along, and the winds of change will determine your fate. Or you can grab the reins of change and take a very active role in shaping your winery's future.

One place to start in determining where your winery is going is to take a look at where the wine industry is going. As the industry slowly moves toward maturity in its life cycle, the playing field is polarizing into large and small.

In basic terms, marketing and brand management are driving the high-volume, $5 to $14 premium wine segment, and small artisan labels are driving the $20 to $100 ultra-premium segment. The $14 to $20 super-premium segment is becoming a graveyard. The reasons for this are many and complex, but suffice it to say that this is where things are going.

If you are in the high-volume premium segment, brand management practices — such as slick packaging, segmented distribution strategies, and advertising — play a key role in the wine's success. This costs money, and it has to come from somewhere. Guess where? That's right, it comes from the production budget. So here's the mandate you have if you make these types of wines: "Make high quality, well-oaked wines that score at least 85 in the *Wine Spectator*. And do it on a tight budget."

What does tight budget really mean? It means not spending much on fruit and oak. That means you spend a fair amount of your time being creative. Making a balanced, well-oaked premium Chardonnay on a shoestring is a real trick.

The good news is that, as far as oak is concerned, winemakers have never before had such a choice of quality oak products to choose from. Besides oak barrels from France, America, other parts of Europe, and the Far East, there are many different oak infusion systems now available.

The door swings both ways, and competition is a good thing. On the one hand, it forces you to stay sharp in order to remain competitive, but it also creates more options for you as a winemaker. Cooperage products are literally coming out of the woodwork, giving you more choices and options than ever before.

So in deciding where you are going, you are confronted with even more questions: Where do I want to be in the 21st century? What market niche will I serve? What style of wine will a well-informed, future consumer want to drink in 2005?

Are you prepared for the future? Because today is yesterday's tomorrow, and tomorrow's today will be here all too quickly.

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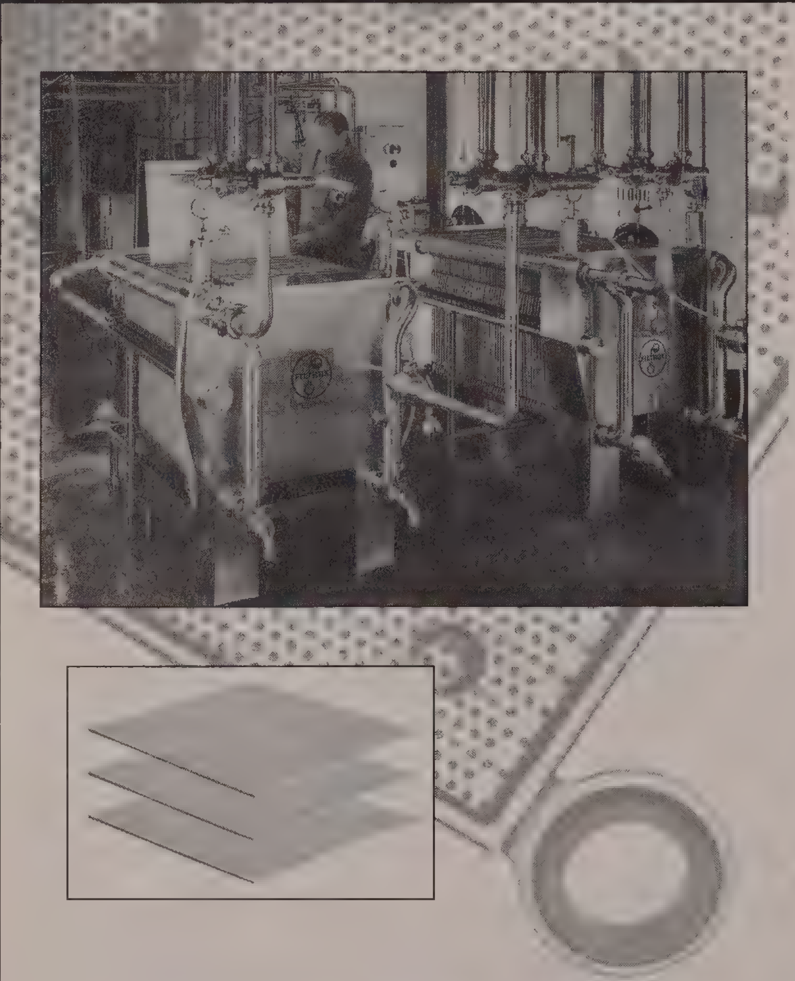

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Once you've asked these questions and determined where you are going, it's time to consider how you will get there.

How will you get there?

Once you've picked a destination, it's time for the real journey to begin. What route will you take?

Part of the answer lies outside the scope of this column, in the realm of financial budgets and marketing strategies. But in terms of winemaking, success in the future dictates certain things. As mentioned, grapegrowing, winemaking, and selling can no longer exist independently of each other. Communication and cooperation are the mandates of the future.

The past has been witness to too many battles between marketing and production, with each camp wanting the upper hand in product decisions. Too many times has marketing insisted on stretching 400 cases of reserve wine into 1,000 or 1,500 cases, so the winery could satisfy demand. Too many times has production stubbornly clung to old ways when asked to evolve the wine style to reflect current consumer preferences.

Time spent in battle with marketers or growers is time not spent on making better wine. The future holds so many choices and options that it will take the concerted efforts of grower, winemaker, and marketer working in harmony to maximize wine quality and marketability.

There are too many new vineyards, too many new clones and rootstocks, too many coopers, and too many oak-alternatives for everything to be smoothly integrated into a winery's product mix without a serious, well-coordinated effort.

While the future holds plenty of work and experimentation, there is good news. Besides the primary benefit of helping you make better wines that are in tune with consumers' preferences and therefore in high demand, this research can be utilized in other ways. How about teaming up with marketing to do some distributor or consumer tastings with those experimental wines, for example? Besides providing a thrill for the distributor or consumer, you can use their opinions as a mini-focus group session to help lead you closer to making the ideal wine. With a little thought, you'll come up with other ideas.

Viewed in the right light, this road into the future is full of opportunities. Opportunities not only to make better wine, but to further relationships with growers and customers. Opportunities for doing interesting, creative winemaking. Opportunities for some fun.

To be continued

Next time we will continue down the path to the future by exploring what's next in wood and wine. ■

Tim Olson is the managing partner and winemaker for Domaine Archer and is also a winemaking consultant. He can be reached at 707/566-8007.

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WINERY WATER & WASTE

by D.R. Storm, PhD. P.E.

MUCH ADO ABOUT LFTS; CHAPTER III

"All the water on earth is all the water there is." While it is not yet a universal ethic, water conservation is gaining more ground each year, as all regions of the globe begin to face the inevitable over-demand and under-supply of water.

The U.S. relies heavily on sensible water use education programs for agriculture and industry, the major users of water resources. Plumbing technology advances and innovations follow closely behind, and voluntary water use curtailment by the public makes steady gains, as the limits of the finite resource become a reality for everyone.

Because of EPA requirements, the so-called low-flush toilet (LFT) came to the marketplace before the plumbing industry could adequately research the hydraulics of a 1.6-gal flush. There were few changes in the geometry of the bowl, that is, only the water closet was reconfigured to flush the prescribed 1.6 gal.

Unfortunately, the 1.6 gallons LFT device was not sufficient to transport the waterborne solids under all conditions of sewer slope, diameter, and surface roughness.

The bowl was not always thoroughly cleansed with one flush. Often consumers complained that several flushes were required, thus defeating the basic conservation feature of lower water consumption.

After complying with the federal law and receiving the blame for the LFT for nearly a decade, the plumbing industry is trying to make things right.

The American Society of Plumbing Engineers (ASPE)[1] has requested a research grant from the U.S. General Services Administration and Department of Energy in the amount of $2.3 million dollars. The grant would provide funds to standardize the test protocol for LFTs, including the creation of reproducible test bulk media that would be made available to plumbing fixture manufacturers to create a uniform wastestream for prototype testing.

*The research will also undertake a more rigorous evaluation of the pressure-assisted flush (p-af) tanks, which can provide a pneumatic assist to the 1.6 gallon flush volume. This writer's brief survey of three plumbing contractors suggests that the current versions of all p-af units are maintenance headaches and terribly expensive to repair if they malfunction. Thus, it appears that the results of the ASPE research may lead to improved LFTs that will give joy to plumbers and consumers alike. (**PWV** will keep you posted.)*

Low-cost options for tank and structural insulation

Past subjects in this column have dealt with several of the multi-faceted approaches to energy conservation from energy-efficient electrical motors to night-air cooling for heat load reduction in winery spaces.[2] One method by which machinery size and capacity (and thus electrical energy) can be minimized is by controlling heat loss or gain through judicious use of insulating materials for fermentation tanks, pipelines, and building envelope roofs and walls.

As expense is a significant factor in the selection of type and thermodynamic efficiency of the insulation material, the cost per unit of "R" (thermal heat transfer resistance) should guide the final selection. Thermal shift, or loss of R-value because of structural, mechanical, and chemical changes over time, is also a major factor to be considered.[3]

Air, foil (metal facing), and foam

One of the most thermodynamically eye-catching insulation materials that can be applied to winery uses is a reflective foil and "bubble wrap" composite. For example, while using spray-on foam of polyurethane, polyisocynurate or polystyrene for insulating storage and fermentation tanks is the most common wine industry practice, a good argument can be made for foil-bubble wrap composites, which can have thermal resistance (R) values of 15 for a ¼-inch thick section.[4]

What makes the foil-bubble wrap (f-b) composite so efficient? While foams can have R-values of 3.7 to 5.8 per inch of thickness, depending upon the precise plastic foam chemistry, the thermal resistance is fully dependent upon the reduction of "conductive" heat transfer. The foil-bubble wrap composite converts nearly all heat flow to the radiant form allowing only 3% of the thermal energy to pass.

If there are factors favoring the use of foam insulations over foil-bubble wrap composites, it would be the lack of resistance of the f-b composite to damage from piercing, cutting, or unspecified environmental damage (solar radiation, aggressive cold or heat). Repair, on the other hand, would be relatively easy and rapid with adhesive-backed, reflective aluminum tape.

Economics

Foil-bubble wrap composites and foam composites can be compared on a dollar per square foot "R" value. Installation costs for f-b composites are relatively low with the use of supervised, unskilled labor. Foam requires skilled applicators and equipment. Approximate comparative costs for 1998 were:

Foil-bubble wrap composite (installed*)
$0.82 per sq.ft. for R-12 ±

Foam (installed**)
$15.00 per sq.ft. for R-13±

* estimated at about 50% of material cost ** two-inch thickness about R-13

For further details and locations of wineries that have installed foil-bubble wrap composite materials, contact: Innovative Energy, 3329 Fitzgerald Road, Suite 1, Rancho Cordova, CA 95742, 1-800-442-FOIL, 1-916-631-9219. ■

David Storm is a consulting civil/sanitary engineer specializing in the planning and design of winery utility systems. He is also the owner of Winters Winery. He is the author of a reference book Winery Utility Systems: Planning, Design and Operation, *Chapman and Hall, NY, December 1996.*

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IN THE CELLAR

by Jake lorenzo

It’s the stuff with the worm

Sitting in the cab on our way to Teotitlan del Valle, Chuy is beside himself. “You’re going to love Oaxaca, Jake. None of that grand tequila factory stuff from Jalisco. These guys are the real deal — small, dedicated, individualistic…”

Jake Lorenzo tries to listen to Chuy’s description of mezcal production, but I can’t help noticing the look that Jakelyn’s mother is giving me. Clearly it says that if we spend the whole week visiting *palenques*, Jake Lorenzo will be one dead detective. Jakelyn’s mom is here to shop. She wants pottery, Zapotec rugs, hand-carved wooden *alebrijes*, and jewelry, lots of jewelry.

I’ve tried to explain that I need to learn about mezcal for the second edition of my book, *The Tequila Lover’s Guide to Mexico*. Jakelyn’s mother could care less. We’re here to buy folk art, and we better get started. Otherwise, she’ll be on the next plane out of here on her way to visit Jakelyn and the grandbaby.

We enter the town, and Chuy directs the taxi driver into the first driveway. Pancho Hernandez welcomes us and begins to show us through his studio. There are piles of hand-spun wool, jars of natural dyes to color the wool, and giant looms made from hand-hewn logs. One room is filled with dozens of gorgeous, brightly colored Zapotec rugs featuring a myriad of geometric designs. Jakelyn’s mom is entranced, asking Pancho questions in rapid-fire order. Chuy winks at me. “Hon,” I say, “we’ll be across the street at the *palenque*. Come on over when you’re ready.” She waves us off with a disdainful gesture.

I smile at Chuy, “I think this will work out just fine, amigo.”

That week in Oaxaca was a delightful blur. Jakelyn’s mother could have opened a retail shop with her purchases. She purchased whole herds of brightly colored wooden antelopes and swarms of carved insects. She bought black pottery from San Bartolo, green pottery from Atzompa, and natural pottery from everywhere else. And rugs, if rugs were magic carpets, we could have flown the entire population of Oaxaca to Sonoma for a long vacation.

Chuy went berserk on the food. We ate each of the seven famous *moles* of Oaxaca. We had squash blossoms and rose petals. We ordered *clayudas*, *tamales*, and *chipotle chile rellenos* that could raise the dead with their smoky heat. We tried grasshoppers, as well as insect larvae, and continued with chicken, pork, and beef cooked every way imaginable. We had *carnitas* served by the kilo. We dined on shrimp cocktails, followed by whole fish baked in clay ovens until I thought we’d sprout gills.

We visited dozens of *palenques* and tasted at least 50 different mezcals. I’ll tell you something: mezcal is not tequila.

Tequila is a wildly popular, beautifully packaged, uniquely flavored beverage perfectly suited to parties and fun, shots and margaritas. Mezcal lurks like a wild child, willful, stubborn, untamed, but precocious with a good heart and a grand future.

Tequila is young, hip, likeable, daring, and all about façade. If there is an ugly side to tequila, you don’t see it until it’s too late. With mezcal it’s all out there for you to see. Not yin and yang, so much, it’s tougher. Mezcal is good *and* bad. Beauty *and* ugliness. Truth *and* lies. Mezcal is smoke *and* mirrors *and* mysticism *and* worms for God’s sake. Mezcal is in your face, take it or leave it, shit or get off the pot-hard liquor.

Tequila exudes subtle power. It is blue agave complexity with a graceful, complex mouth feel. Mezcal takes *cojones*. Nothing about it is easy. The taste roils with smoke and fire. The smell attacks with volatile aromas redolent of gasoline and creosote. It burns going down. It burns in the stomach. Its flavors assault the mouth, hold on to the taste buds, and seem like they’ll never let go. Mezcal is fierce, dangerous, and threatening.

By the way, did I mention that mezcal allows you to commune with your ancestors?

For the most part, mezcal is produced by Zapotec Indians. The people of Mexico have a tough time economically, but when it comes to economic well-being the indigenous people occupy the statistical bottom. Statistics show that 50% are malnourished, 40% have no access to potable water, and one-third have no electricity in the home.

Mezcal production is labor-intensive. The work is strenuous, sticky, dirty, and demanding. It requires dedication, strength, and intelligence, and it doesn’t pay worth a damn. (Sounds a little like the wine business during the 1970s, doesn’t it?) So, the work of making mezcal is left to the Zapotecs.

Mezcal retains ceremonial, social, and medicinal significance for the Zapotec people. Mezcal helps digestion when sipped before a meal. Of course, it also helps when sipped after a meal.

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It will cure the common cold, a cough, arthritis, miscellaneous pains, and headaches. It eases the discomfort of menstruation, the pain of broken bones, and probably the heartbreak of psoriasis. When all else fails, mezcal, along with special herbs provided by a *curandera*, and a strict regimen of prayer can help with cancer, heart disease, and tumors. The Zapotecs are convinced that mezcal creates a unique state of intoxication that opens the doors of communication with the supernatural and their long-departed ancestors.

Even the worms, *gusanos*, are credited with special properties. They are powerful aphrodisiacs. Consuming them increases the chances of conceiving male children. They can be used in potions to cure all kinds of illness. They combat curses placed by witches. *Gusanos* can be as powerful as your belief in them, but Jake Lorenzo can assure you of one thing: they don't help the taste of mezcal at all.

Jake Lorenzo wants to like mezcal. The people making it work so hard, care so much, and need the money so badly. The production is primitive, conducted in tiny batches, and follows a tradition more than 300 years old. While there's plenty of incredibly bad mezcal out there, several producers are working hard at making excellent product.

Right now Jake Lorenzo is comfortable recommending Del Maestro, Del Maguey, Don Amado, and Encantado. Think of it as a Quixotic endeavor. Get a bottle of mezcal and take your medicine. Visit with your ancestors, and then let me know if you want to buy a Zapotec carpet. ■

Continued from page 12

and that we recognize two types of winemakers, the ***viticulturist***, responsible for manipulating wine quality in the vineyard, and the ***enologist***, responsible for conserving wine quality within the winery.

Enologists who support these ideas might now begin to refer to themselves as "enologists," not "winemakers." Who shall be the first to change their business card? ■

Dr. Richard Smart, "the flying vine-doctor," is an international viticultural consultant. Contact him in Australia by fax at 011-612-6584-0121, or by e-mail: vinedoctor@smartvit.com.au. Visit his home page at http://www.smartvit.com.au. He visits America frequently and can be contacted at Vinquiry in Windsor, CA, tel: 707/838-6312.

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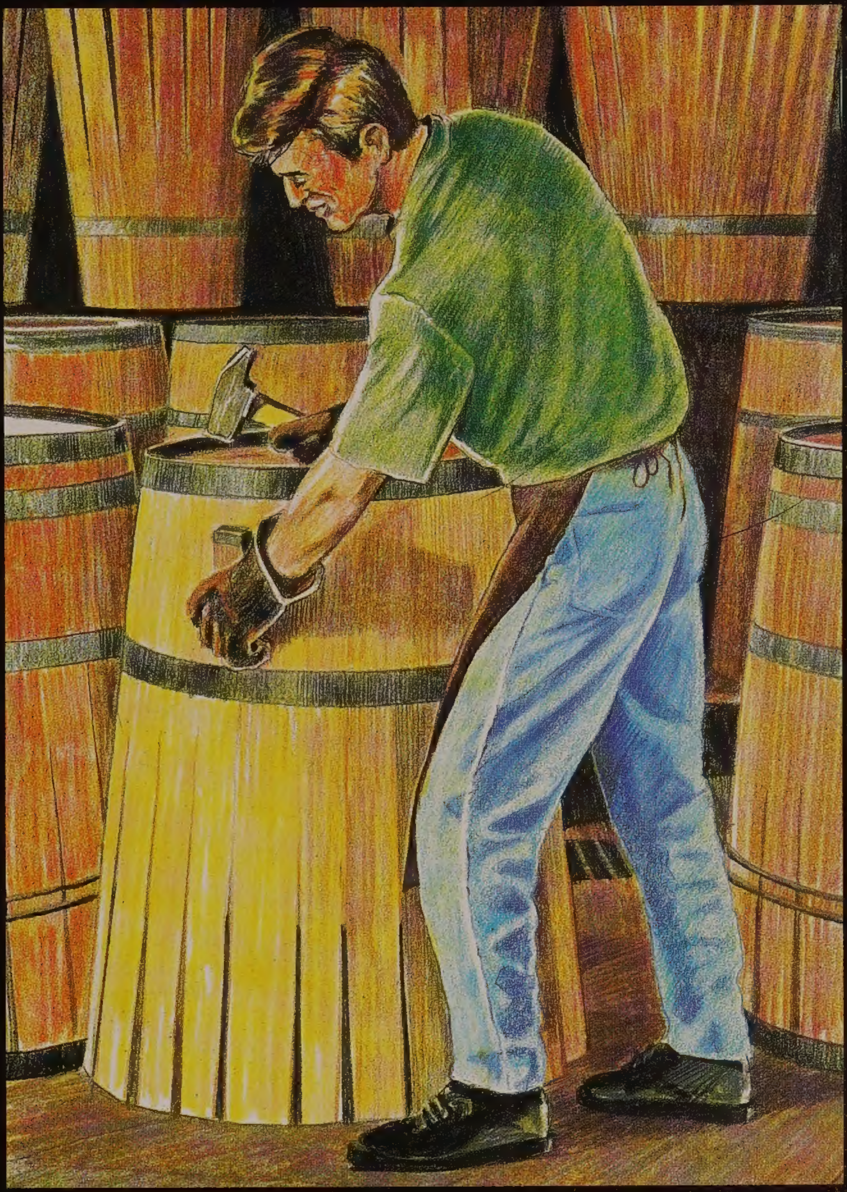

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